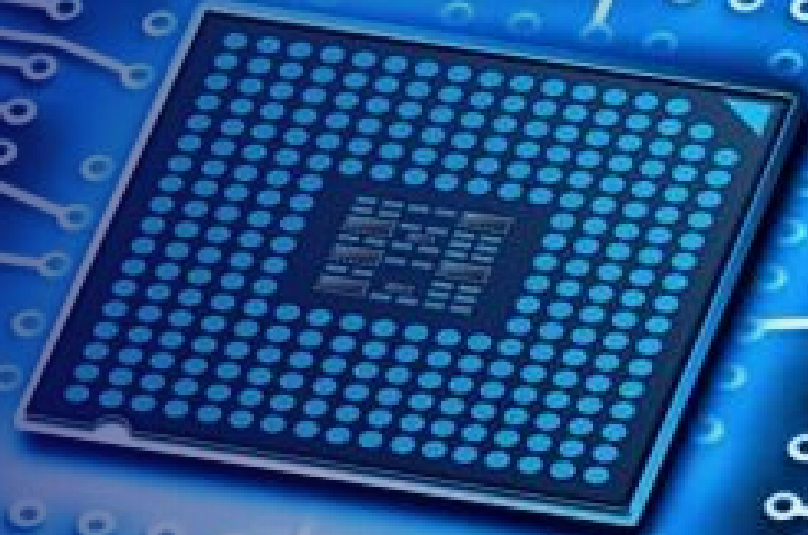


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SEMICONDUCTOR

P-channel Power MOSFETs




January 2024



Global Presentation

GOFORD



-  R&D
-  Goford
-  Distributors



**cost
effectiveness**



reliability

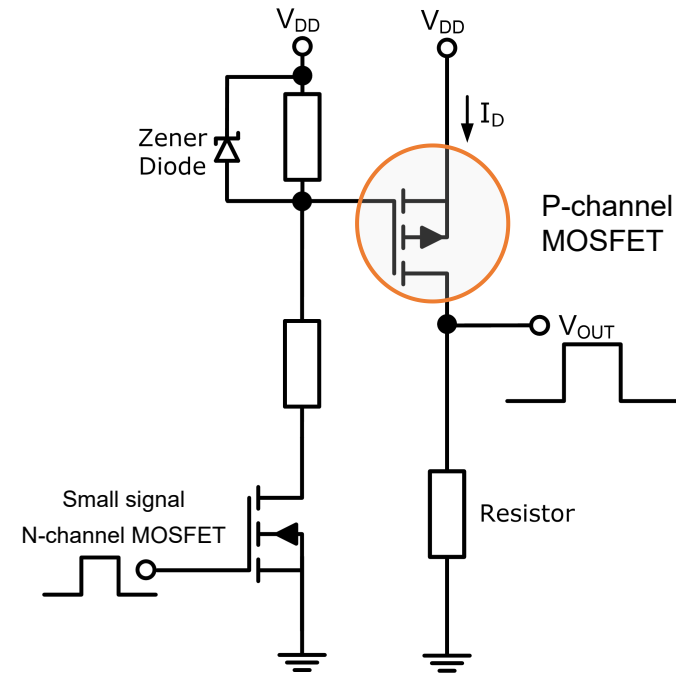
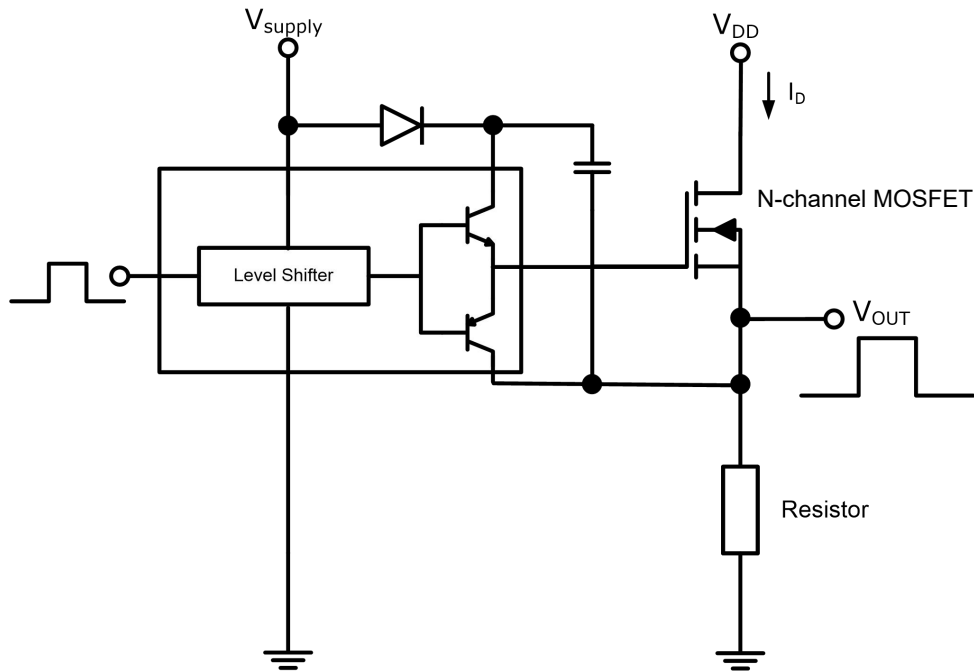


service



Introduction to P-channel MOSFETs

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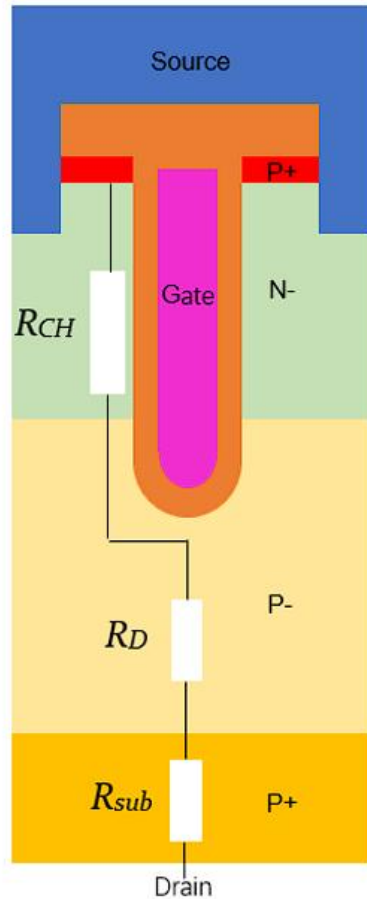


Important note: for the same chip size $\rightarrow R_{DS(on)_Pch} \approx 2.5 \times R_{DS(on)_Nch}$

N- versus P-channel MOSFET Structure

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Resistance Distribution



$$R_{DSON} = R_{CH} + R_D + R_{sub}$$

$$R_{CH} = \frac{L(W_m + W_t)}{2\mu_{ns}C_{ox}(V_{GS} - V_{TH})}$$

$$R_D = \rho_D \left\{ 0.5(W_m + W_t) \ln\left(1 + \frac{W_m}{W_t}\right) + (t_D - 0.5W_m) \right\}$$

$$R_{sub} = \rho_s t_s$$

L : Channel length

ρ_D : Epitaxial resistance

$W_m + W_t$: Cell pitch

ρ_s : Substrate resistivity

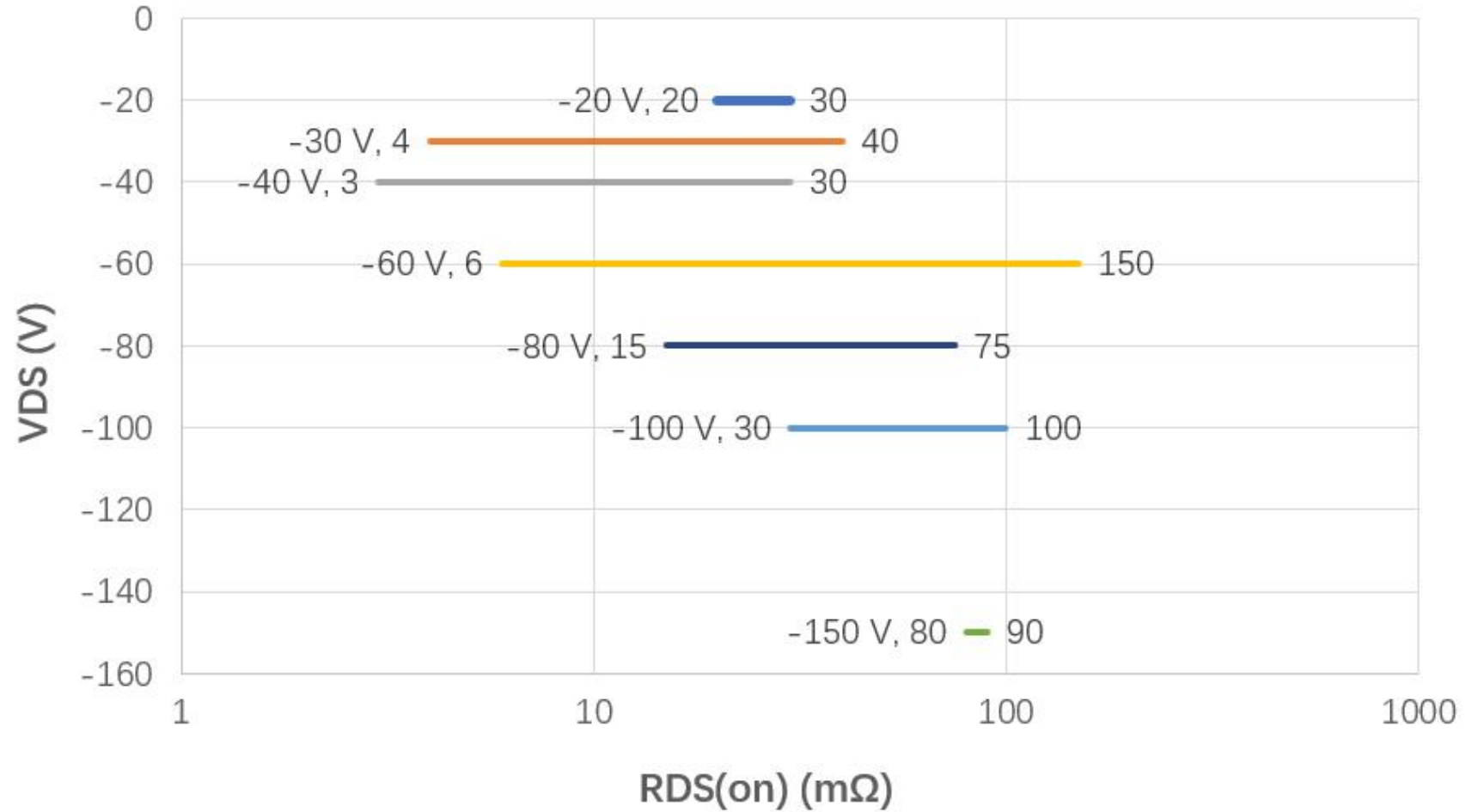
C_{ox} : Gate oxide capacitance

t_s : Substrate thickness

P-channel MOSFET $R_{DS(on)}$

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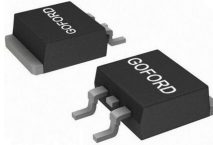
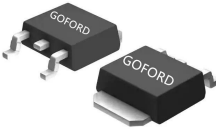
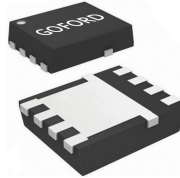
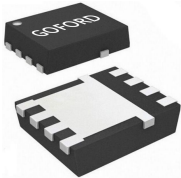
Voltage class vs $R_{DS(on)}$







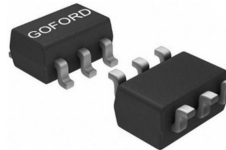
P-channel Package Portfolio

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Packages optimized for high power applications and high current carrying capability

| | TO-220 | D2PAK | DPAK | DFN 5x6 | DFN 3 x 3 |
|--------------|---|--|---|---|---|
| |  |  |  |  |  |
| Height (mm) | 4.57 | 4.57 | 2.3 | 1.17 | 0.75 |
| Outline (mm) | 27 x 10.16 | 15x 10 | 10.1 x 6.6 | 5.4 x 6.15 | 3.15x 3.3 |

Packages optimized for small power and small signal applications

| | SOT-223 | SOT-23 | SOP-8 | TSSOP-8 | SOT-23-6 |
|--------------|--|---|--|--|--|
| |  |  |  |  |  |
| Height (mm) | 1.6 | 1.05 | 1.45 | 0.27 | 1.1 |
| Outline (mm) | 6.6 x 7.0 | 3 x 2.55 | 6.0 x 4.9 | 6.6x3.05 | 2.9x2.8 |

P-channel: - 20 V

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| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|----------------------------|-----------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G06P01E | SOT-23 | -12V | -4A | -0.6V | | 23mΩ | 14 | Standard | 150 |
| 2301 | | -20V | -3A | -0.65V | | 42mΩ | 8.5 | Standard | 150 |
| 3415A | | -20V | -4A | -0.7V | | 28mΩ | 10 | Standard | 150 |
| G2305 | | -20V | -4A | -0.7V | | 29mΩ | 12 | Standard | 150 |
| G09P02L | SOT-23-3L | -20V | -9A | -0.7V | | 17mΩ | 72 | Standard | 150 |
| G350P02LLE | SOT-23-6L | -20V | -4.5A | -0.7V | | 27mΩ | 17.2 | Standard | 150 |
| G220P02D2 | DFN2*2-6L | -20V | -8A | -0.7V | 15mΩ | 19mΩ | 14 | Standard | 150 |
| G170P02D2 | | -20V | -16A | -0.7V | | 13mΩ | 30 | Standard | 150 |
| G170P02D32 | DFN3*3-8L | -20V | -20A | -0.7V | | 15mΩ | 30 | Standard | 150 |
| G45P02D3 | | -20V | -45A | -0.65V | | 6mΩ | 44 | Standard | 150 |
| G075P02D5 | DFN5*6-8L | -20V | -45A | -0.65V | | 6.3mΩ | 44 | Standard | 150 |
| G040P02D5 | | -20V | -90A | -0.65V | | 3.5mΩ | 134 | Standard | 150 |
| G085P02TS | TSSOP-8 | -20V | -8.2A | -0.55-0.9V | | 7mΩ | 29 | Standard | 150 |
| G090P02S | SOP-8 | -20V | -11A | -0.65V | | 7.5mΩ | 47 | Standard | 150 |
| G11S | | -20V | -11A | -0.75V | | 15mΩ | 47 | Standard | 150 |
| G70P02K | TO-252 | -20V | -45A | -0.65V | | 5.9mΩ | 44 | Standard | 150 |
| G040P02K | | -20V | -90A | -0.65V | | 3.4mΩ | 134 | Standard | 150 |
| G040P02T | TO-220 | -20V | -90A | -0.65V | | 3.5mΩ | 134 | Standard | 150 |

P-channel: - 30 V

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|---------------------------|-----------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| 2301H | SOT-23 | -30V | -2.8A | -1.4V | 60mΩ | 85mΩ | 4.5 | Standard | 150 |
| 3401 | | -30V | -4.2A | -0.8v | 42mΩ | 49mΩ | 8.5 | Standard | 150 |
| G500P03IE | | -30V | -4.6A | -0.8V | 42mΩ | 48mΩ | 13 | Standard | 150 |
| G3035 | | -30V | -4.6A | -1.5V | 41mΩ | 61mΩ | 13 | Standard | 150 |
| G3035L | SOT-23-3L | -30V | -4.1A | -1.5V | 48mΩ | 60mΩ | 12.5 | Standard | 150 |
| G3401L | | -30V | -4.4A | -0.8V | 43mΩ | 51mΩ | 9.3 | Standard | 150 |
| G7P03L | | -30V | -7A | -1.5V | 19mΩ | 27mΩ | 29 | Standard | 150 |
| G7P03D2 | DFN2*2-6L | -30V | -7A | -0.9V | 17mΩ | 21mΩ | 19 | Standard | 150 |
| G12P03D3 | DFN3*3-8L | -30V | -12A | -1.5V | 16mΩ | 22mΩ | 24.5 | Standard | 150 |
| G10P03 | | -30V | -22A | -0.9V | | 20mΩ | 44 | Standard | 150 |
| G170P03D3 | | -30V | -30A | -1.4V | 12mΩ | 17mΩ | 35 | Standard | 150 |
| G16P03D3 | | -30V | -45A | -1.7V | 8.5mΩ | 12mΩ | 35 | Standard | 150 |
| G18P03D3 | | -30V | -50A | -1.5V | 7.5mΩ | 11mΩ | 45 | Standard | 150 |
| G80P03D5 | DFN5*6-8L | -30V | -65A | -1.5V | 5mΩ | 6.5mΩ | 95 | Standard | 150 |
| G40P03D5 | | -30V | -35A | -1.4V | 8.5mΩ | 11.5mΩ | 50 | Standard | 150 |
| G050P03D5 | | -30V | -85A | -1.4V | 3mΩ | 4mΩ | 111 | Standard | 150 |

P-channel: - 30 V

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|---------------------------|---------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G9435S | SOP-8 | -30V | -5.1A | -1.6V | 48mΩ~55mΩ | 73mΩ~105mΩ | 12 | Standard | 150 |
| G7P03S | | -30V | -9A | -1.6V | 16mΩ | 23mΩ | 24.5 | Standard | 150 |
| 4435 | | -30V | -11A | -1.4V | 12mΩ | 18mΩ | 40 | Standard | 150 |
| G18P03S | | -30V | -15A | -1.6V | 8.1mΩ | 10.5mΩ | 58 | Standard | 150 |
| G16P03S | | -30V | -16A | -1.5V | 9.9mΩ | 14mΩ | 35 | Standard | 150 |
| G050P03S | | -30V | -25A | -1.2V | 4.5mΩ | 5.5mΩ | 111 | Standard | 150 |
| G160P03K | TO-252 | -30V | -30A | -1.5V | 12mΩ | 17mΩ | 31.2 | Standard | 150 |
| G160P03KI | | -30V | -30A | -1.5V | 12mΩ | 17mΩ | 31.2 | Standard | 150 |
| G40P03K | | -30V | -40A | -1.7V | 7.5mΩ | 10mΩ | 50 | Standard | 150 |
| G80P03K | | -30V | -80A | -1.4V | 4.5mΩ | 6mΩ | 30 | Standard | 150 |
| G050P03K | | -30V | -85A | -1.5V | 3.2mΩ | 4.3mΩ | 111 | Standard | 150 |
| G050P03T | TO-220 | -30V | -85A | -1.2V | 4mΩ | 5mΩ | 111 | Standard | 150 |

P-channel: - 40 V

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|---------------------------|-----------|-----------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| 5P40 | SOT-23-3L | -40V | -5A | -1.7V | 57mΩ | 77mΩ | 14 | Standard | 150 |
| G07P04S | SOP-8 | -40V | -7A | -1.5V | 14mΩ | 18mΩ | 31 | Standard | 150 |
| G75P04S | | -40V | -20A | -1.4V | 5.3mΩ | 6.9mΩ | 106 | Standard | 150 |
| G13P04S | | -40V | -13A | -1.8V | 13mΩ | | 40 | Standard | 150 |
| G200P04D3 | | DFN3*3-8L | -40V | -20A | -1.7V | 13mΩ | 17mΩ | 54 | Standard |
| G26P04D5 | DFN5*6-8L | -40V | -26A | -1.5V | 15mΩ | 18mΩ | 45 | Standard | 150 |
| G35P04D5 | | -40V | -35A | -1.7V | 11mΩ | 15mΩ | 60 | Standard | 150 |
| G75P04D5 | | -40V | -80A | -1.7V | 4.7mΩ | 6.3mΩ | 106 | Standard | 150 |
| G26P04K | TO-252 | -40V | -26A | -1.5V | 13mΩ | 17mΩ | 42 | Standard | 150 |
| 45P40 | | -40V | -45A | -1.5V | 10.5mΩ | | 42 | Standard | 150 |
| G75P04K | | -40V | -80A | -1.5V | 5mΩ | 6.7mΩ | 106 | Standard | 150 |
| G90P04K | | -40V | -90A | -1.8V | 5.8mΩ | | 97 | Standard | 150 |
| G70P04K | | -40V | -70A | -1.4V | 7mΩ | 9mΩ | 42 | Standard | 150 |
| G450P04K | | -40V | -11A | -1.6V | 32mΩ | 45mΩ | 25 | Standard | 150 |
| G12P04K | | -40V | -12A | -1.4V | 29mΩ | 35mΩ | 25 | Standard | 150 |
| G15P04K | | -40V | -15A | -1.5V | 25mΩ | 30mΩ | 25 | Standard | 150 |
| G45P40T | | TO-220 | -40V | -45A | -1.5V | 10.5mΩ | 15mΩ | 42 | Standard |
| G75P04T | -40V | | -80A | -1.7V | 5.2mΩ | 6.8mΩ | 106 | Standard | 150 |
| G040P04T | -40V | | -180A | -1.6V | 2.9mΩ | 3.7mΩ | 206 | Standard | 150 |
| G75P04F | TO-220F | -40V | -54A | -1.45V | 5.1mΩ | 6.6mΩ | 106 | Standard | 150 |
| G75P04FI | | -40V | -54A | -1.5V | 6mΩ | 7.5mΩ | 106 | Standard | 150 |
| G90P04F | | -40V | -68A | -1.5V | 6mΩ | 8mΩ | 42 | Standard | 150 |
| G75P04M | TO-263 | -40V | -80A | -1.7V | 5.3mΩ | 7.0mΩ | 106 | Standard | 150 |
| G040P04M | | -40V | -180A | -1.6V | 2.9mΩ | 3.7mΩ | 206 | Standard | 150 |

P-channel: - 60 V

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| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|----------------------------|-----------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G02P06 | SOT-23 | -60V | -1.6A | -1.8V | 150mΩ | 180mΩ | 11.3 | Standard | 150 |
| G1K1P06LH | SOT-23-3L | -60V | -4.5A | -3.0V | 93mΩ | | 11 | Standard | 150 |
| G05P06L | | -60V | -5A | -1.7V | 65mΩ | 77mΩ | 37 | Standard | 150 |
| G700P06LL | SOT-23-6L | -60V | -5A | -1.8V | 61mΩ | 74mΩ | 15.8 | Standard | 150 |
| G1K1P06LL | | -60V | -3A | -1.8V | 85mΩ | 105mΩ | 25 | Standard | 150 |
| G800P06LL | | -60V | -3.5A | -1.5V | 60mΩ | 92mΩ | 12 | Standard | 150 |
| G1K1P06HH | SOT-223 | -60V | -4.5A | -2.7V | 90mΩ | | 11 | Standard | 150 |
| G700P06H | | -60V | -5A | -1.7V | 60mΩ | 73mΩ | 15.8 | Standard | 150 |
| G6P06 | SOP-8 | -60V | -3.5A | -1.8V | 58mΩ | 70mΩ | 29 | Standard | 150 |
| G400P06S | | -60V | -6A | -2.5V | 33mΩ | | 46 | Standard | 150 |
| G300P06S | | -60V | -6.5A | -2.4V | 25mΩ | | 49 | Standard | 150 |
| G230P06S | | -60V | -9A | -2.4V | 18mΩ | | 62 | Standard | 150 |
| G170P06S | | -60V | -12A | -2.5V | 14mΩ | | 75 | Standard | 150 |
| G08P06D3 | DFN3*3-8L | -60V | -8A | -2.8V | 40mΩ | | 25 | Standard | 150 |
| G700P06D3 | | -60V | -18A | -1.7V | 57mΩ | 69mΩ | 25 | Standard | 150 |
| G700P06D5 | DFN5*6-8L | -60V | -25A | -1.7V | 58mΩ | 70mΩ | 25 | Standard | 150 |
| G300P06D5 | | -60V | -40A | -2.4V | 25mΩ | | 49 | Standard | 150 |
| G230P06D5 | | -60V | -48A | -2.4V | 18mΩ | | 62 | Standard | 150 |
| G65P06D5 | | -60V | -65A | -2.5V | 13.5mΩ | | 75 | Standard | 150 |
| GT065P06D5 | | -60V | -103A | -1.6V | 5.9mΩ | 7.4mΩ | 62 | Standard | 150 |

P-channel: - 60 V

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|---------------------------|---------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G20P06K | TO-252 | -60V | -20A | -2.6V | 31mΩ | | 46 | Standard | 150 |
| G12P06K | | -60V | -12A | -1.7V | 57mΩ | 69mΩ | 23 | Standard | 150 |
| 25P06 | | -60V | -25A | -2.4V | 25mΩ | | 37 | Standard | 150 |
| G230P06K | | -60V | -60A | -2.5V | 17mΩ | | 62 | Standard | 150 |
| G180P06K | | -60V | -45A | -2.5V | 15.5mΩ | | 46 | Standard | 150 |
| G65P06K | | -60V | -65A | -2.5V | 13mΩ | | 75 | Standard | 150 |
| G700P06J | TO-251 | -60V | -23A | -1.7V | 60mΩ | 70mΩ | 23 | Standard | 150 |
| G700P06T | TO-220 | -60V | -25A | -1.6V | 58mΩ | 70mΩ | 23 | Standard | 150 |
| G400P06T | | -60V | -32A | -2.4V | 30mΩ | | 46 | Standard | 150 |
| G300P06T | | -60V | -40A | -2.5V | 25mΩ | | 49 | Standard | 150 |
| G230P06T | | -60V | -60A | -2.6V | 18mΩ | | 62 | Standard | 150 |
| G65P06T | | -60V | -65A | -2.5V | 14mΩ | | 75 | Standard | 150 |
| GT065P06T | | -60V | -82A | -1.7V | 6.2mΩ | 7.8mΩ | 62 | Standard | 150 |
| G115P06T | | -60V | -98A | -2.7V | 9.3mΩ | | 125 | Standard | 150 |
| G120P06T | | -60V | -120A | -2.5V | 7mΩ | | 230 | Standard | 150 |
| GT042P06T | | -60V | -160A | -2.3V | 3.7mΩ | 5.5mΩ | 305 | Standard | 150 |
| G080P06T | | -60V | -195A | -2.4V | 6.3mΩ | | 186 | Standard | 150 |
| G230P06F | TO-220F | -60V | -42A | -3.0V | 18mΩ | | 62 | Standard | 150 |
| G65P06F | | -60V | -65A | -2.6V | 13mΩ | | 75 | Standard | 150 |
| G115P06M | TO-263 | -60V | -98A | -2.7V | 9mΩ | | 125 | Standard | 150 |
| G120P06M | | -60V | -120A | -2.5V | 7mΩ | | 230 | Standard | 150 |
| GT042P06M | | -60V | -160A | -2.0V | 3.6mΩ | 5.4mΩ | 305 | Standard | 150 |
| G170P06M | | -60V | -65A | -2.5V | 12mΩ | | 75 | Standard | 150 |
| G080P06M | | -60V | -195A | -2.4V | 6.2mΩ | | 186 | Standard | 150 |

P-channel: - 80 V

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| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|----------------------------|-----------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| GT700P08S | SOP-8 | -80V | -6.5A | -3V | 60mΩ | | 75 | Standard | 150 |
| GT700P08D3 | DFN3*3-8L | -80V | -16A | -3V | 57mΩ | | 75 | Standard | 150 |
| GT180P08D5 | DFN5*6-8L | -80V | -78A | -1.8V | 14mΩ | 16mΩ | 62.1 | Standard | 150 |
| GT700P08K | TO-252 | -80V | -20A | -3V | 60mΩ | | 75 | Standard | 150 |
| G20P08K | | -80V | -20A | -1.7V | 52mΩ | 58mΩ | 48 | Standard | 150 |
| GT750P08K | | -80V | -28A | -2V | 52mΩ | 65mΩ | 36 | Standard | 150 |
| GT700P08T | TO-220 | -80V | -25A | -3V | 58mΩ | | 75 | Standard | 150 |
| GT180P08T | | -80V | -89A | -1.8V | 14mΩ | 16mΩ | 62 | Standard | 150 |
| GT180P08M | TO-263 | -80V | -89A | -1.8V | 14mΩ | 16mΩ | 62 | Standard | 150 |

P-channel: - 100 V

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|----------------------------|-----------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| GT6K2P10IH | SOT-23 | -100V | -1A | -2.45V | 545mΩ | | 10 | Standard | 150 |
| G04P10HE | SOT-223 | -100V | -4A | -1.55V | 177mΩ | 190mΩ | 25 | Standard | 150 |
| G2K2P10D3E | DFN3*3-8L | -100V | -10A | -1.6V | 175mΩ | 188mΩ | 33 | Standard | 150 |
| GT750P10D5 | DFN5*6-8L | -100V | -24A | -1.8V | 50mΩ | 62mΩ | 40 | Standard | 150 |
| G2K2P10SE | SOP-8 | -100V | -3.5A | -1.6V | 170mΩ | 180mΩ | 23 | Standard | 150 |
| GT6K2P10KH | TO-252 | -100V | -4.3A | -2.5V | 525mΩ | | 10 | Standard | 150 |
| G12P10K | | -100V | -12A | -1.6V | 178mΩ | 192mΩ | 33 | Standard | 150 |
| G12P10KE | | -100V | -12A | -1.7V | 178mΩ | 192mΩ | 33 | Standard | 150 |
| G20P10KE | | -100V | -20A | -1.5V | 94mΩ | | 70 | Standard | 150 |
| GT750P10K | | -100V | -24A | -2.2V | 56mΩ | 73mΩ | 40 | Standard | 150 |
| GT500P10K | | -100V | -30A | -2V | 45mΩ | 54mΩ | 36 | Standard | 150 |
| GT400P10K | | -100V | -35A | -1.7V | 29mΩ | 34mΩ | 41 | Standard | 150 |
| G12P10TE | | TO-220 | -100V | -12A | -1.9V | 170mΩ | 180mΩ | 33 | Standard |
| GT400P10T | -100V | | -35A | -1.9V | 28mΩ | 33mΩ | 41 | Standard | 150 |
| GT250P10T | -100V | | -56A | -3.1V | 25mΩ | | 73 | Standard | 150 |
| GT750P10M | TO-263 | -100V | -24A | -2V | 53mΩ | 65mΩ | 40 | Standard | 150 |
| GT400P10M | | -100V | -35A | -1.7V | 29mΩ | 33mΩ | 41 | Standard | 150 |
| GT250P10M | | -100V | -56A | -2.8V | 27mΩ | | 73 | Standard | 150 |
| GT240P10M | | -100V | -60A | -1.4V | 19mΩ | 22mΩ | 60 | Standard | 150 |

P-channel: - 150 V

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|---------------------------|-----------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G01P15L | SOT-23-3L | -150V | -1A | -2V | 0.72Ω | 0.78Ω | 12 | Standard | 150 |
| G01P15LL | SOT-23-6L | -150V | -1A | -2V | 0.77Ω | | 12 | Standard | 150 |
| G900P15D5 | DFN5*6-8L | -150V | -35A | -2.5V | 65mΩ | | 27 | Standard | 150 |
| G2K8P15S | SOP-8 | -150V | -2.2A | -2.2V | 277mΩ | | 11 | Standard | 150 |
| G6K8P15SE | SOP-8 | -150V | -6A | -2.6V | 660mΩ | | 11 | Standard | 150 |
| G2K8P15K | TO-252 | -150V | -12A | -2.2V | 271mΩ | | 11 | Standard | 150 |
| G6K8P15KE | TO-252 | -150V | -12A | -2.5V | 660mΩ | | 11 | Standard | 150 |
| G1K6P15K | TO-252 | -150V | -24A | -2.5V | 132mΩ | | 22 | Standard | 150 |
| GT1K2P15K | TO-252 | -150V | -27A | -2.0V | 90mΩ | 100mΩ | 86 | Standard | 150 |
| G900P15K | TO-252 | -150V | -35A | -2.5V | 65mΩ | | 27 | Standard | 150 |
| G900P15T | TO-220 | -150V | -35A | -2.5V | 62mΩ | | 27 | Standard | 150 |
| G900P15M | TO-263 | -150V | -35A | -2.6V | 62mΩ | | 27 | Standard | 150 |
| G450P15M | TO-263 | -150V | -70A | -2.5V | 33mΩ | | 177 | Standard | 150 |

Dual: P+P

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|----------------------------|----------------|---------|------------------|-------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G4953S | SOP-8 DUAL | -30V | -5A | -1.4V | 37mΩ | 52mΩ | 11 | Standard | 150 |
| G220P03S2 | | -30V | -9A | -1.5V | 17mΩ | 24mΩ | 24.5 | Standard | 150 |
| G170P03S2 | | -30V | -11A | -1.6V | 15mΩ | 20mΩ | 40 | Standard | 150 |
| G120P03S2 | | -30V | -16A | -1.6V | 11mΩ | 15mΩ | 35 | Standard | 150 |
| G200P04S2 | | -40V | -9A | -1.5V | 16mΩ | 20mΩ | 42 | Standard | 150 |
| G1K8P06S2 | | -60V | -3.2A | -1.9V | 140mΩ | 175mΩ | 11.3 | Standard | 150 |
| G2K2P10S2E | | -100V | -3.5A | -1.6V | 170mΩ | 180mΩ | 23 | Standard | 150 |
| G220P03D32 | DFN3*3-8L DUAL | -30V | -12A | -1.5V | 18mΩ | 25mΩ | 25 | Standard | 150 |

Dual: N+P

GOFORD

| Product | Package | VDS [V] | ID max @25°C [A] | VGS(th) [V] | RDS(on) typ @10 V [mΩ] | RDS(on) typ @4.5 V [mΩ] | QG typ @10 V [nC] | Qualification | TJ max [25°C] |
|----------------------------|----------------|----------------|------------------|--------------|------------------------|-------------------------|-------------------|---------------|---------------|
| G1NP02LLE | SOT-23-6L DUAL | 20V/-20V | 1.3A/-1.1A | 0.55V/-0.55V | | 170mΩ/380mΩ | 1/1.22 | Standard | 150 |
| 6703 | | 20V/-20V | 2.9A/-3A | 0.85V/-0.7V | | 30mΩ~45mΩ / 80mΩ~110mΩ | 4 | Standard | 150 |
| G300C03L6 | | 30V/-30V | 5.6A/-4.2A | 1V/-0.8V | 22mΩ / 43mΩ | 25mΩ / 51mΩ | 16/8.5 | Standard | 150 |
| 6706 | SOP-8 DUAL | 20V/-20V | 6.5A/-5A | 0.7V/-0.7V | | 12mΩ~18mΩ / 23mΩ~28mΩ | 5.2/9.2 | Standard | 150 |
| 6706A | | 30V/-30V | 6.5A/-5A | 1.5V/-1.6V | 16mΩ / 35mΩ | 23mΩ / 54mΩ | 14.8/11 | Standard | 150 |
| G05NP04S | | 40V/-40V | 4.5A/-10A | 1.25V/--1.9V | 27.5mΩ/26mΩ | 35mΩ/28mΩ | 8.9/13 | Standard | 150 |
| G4614 | | 40V/-40V | 6A/-7A | 2.0V/-1.5V | 26mΩ/25mΩ | 37mΩ/32mΩ | 15/25 | Standard | 150 |
| G4616 | | 40V/-40V | 8A/-7A | 1.5V/-1.5V | 15mΩ/28mΩ | 20mΩ/36mΩ | 45639 | Standard | 150 |
| G06NP06DS2 | | 60/-60V | 3A/-6A | 0.9V/-1.7V | 63mΩ/360mΩ | 66mΩ/73mΩ | 45472 | Standard | 150 |
| G05NP06S2 | | 60V/-60V | 5A/-3.1A | 1.5V/-1.7V | 28mΩ/62mΩ | 31mΩ/72mΩ | 22/37 | Standard | 150 |
| G06NP06S2 | | 60/-60V | 6A/-6A | 1.5V/-2.5V | 30mΩ/37mΩ | 33mΩ | 22/25 | Standard | 150 |
| G1K2C10S2 | | 100V/-100V | 3A/-3.5A | 1.5V/-1.8V | 110mΩ/165mΩ | 120mΩ/175mΩ | 22/23 | Standard | 150 |
| G05NP10S | | 100V/-100V | 5A/-6A | 2.2V/-2.2V | 127mΩ/193mΩ | 144mΩ/~ | 18/25 | Standard | 150 |
| G100C04D52 | | DFN5*6-8L DUAL | 40V/-40V | 40A/-24A | 1.8V/--1.6V | 7mΩ/13mΩ | 9mΩ/18mΩ | 29/45 | Standard |
| G18NP06Y | TO-252-4 DUAL | 60V/-60V | 18A/-18A | 1.5V/-2.5V | 26mΩ/33mΩ | 30mΩ | 22/25 | Standard | 150 |
| G180C06Y | | 60V/-60V | 50A/-60A | 1.5/-3.0V | 14mΩ/19mΩ | 16mΩ | 36/62 | Standard | 150 |

P-channel MOSFET Application Areas

GOFORD



Auto



Inverter



Telecome



Tool



LED Lighting



BMS

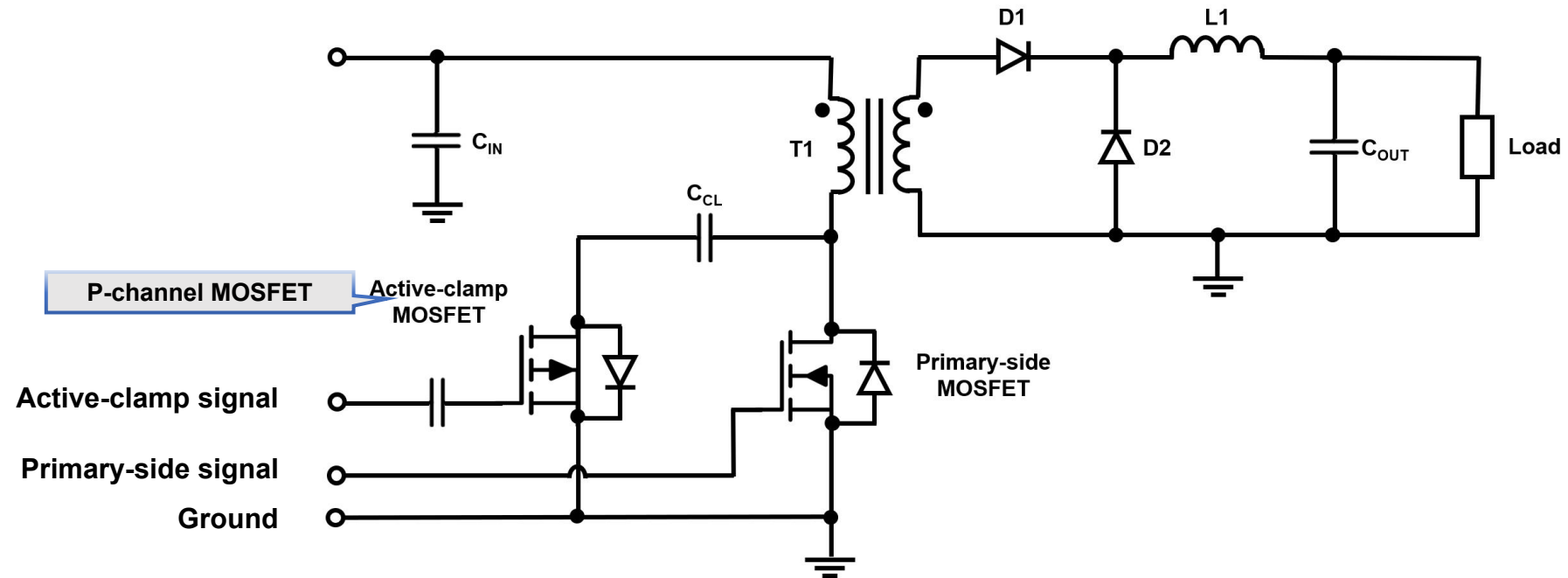


Consumer



Active-clamp Forward Converter

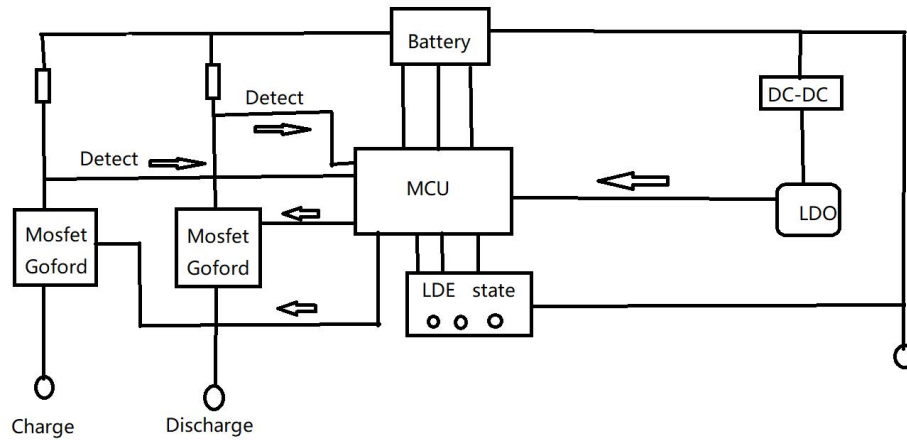
GOFORD



| Recommended Power MOSFETs | | | |
|---------------------------|-----------|------------|---------------|
| Product | Package | Parameters | |
| G2K8P15S | SOP-8 | -150V | 277m Ω |
| G6K8P15SE | SOP-8 | -150V | 660m Ω |
| G900P15D5 | DFN5*6-8L | -150V | 65m Ω |

Battery Protection Unit

GOFORD



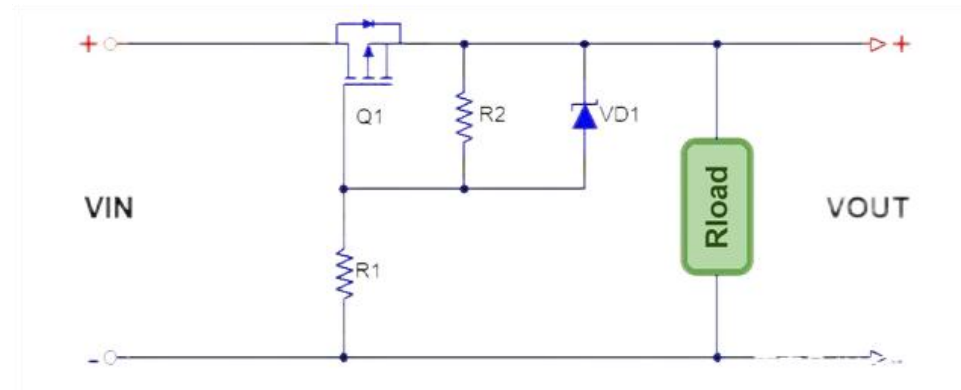
| Battery Voltage | Recommended Power MOSFETs | | | |
|---------------------------|----------------------------|-----------|------------|-------|
| | Product | Package | Parameters | |
| 18V | G050P03S | SOP-8 | -30V | 4.5mΩ |
| | G18P03S | SOP-8 | | 8.1mΩ |
| | G40P03K | TO-252 | | 7.5mΩ |
| | G80P03K | | | 4.5mΩ |
| | G050P03K | DFN3*3-8L | | 3.2mΩ |
| | G170P03D3 | | | 12mΩ |
| | G16P03D3 | | | 8.5mΩ |
| 24V, 36V | G18P03D3 | | 7.5mΩ | |
| | G6P06 | SOP-8 | -60V | 58mΩ |
| | G230P06S | SOP-8 | | 18mΩ |
| | G12P06K | TO-252 | | 57mΩ |
| | G08P06D3 | DFN3*3-8L | | 40mΩ |
| | G700P06D3 | | | 57mΩ |
| G1K1P06HH | SOT-223 | 90mΩ | | |
| 48V | G12P10KE | TO-252 | -100V | 178mΩ |
| | G2K2P10D3E | DFN3*3-8L | | 175mΩ |
| | G04P10HE | SOT-223 | | 177mΩ |
| 72V, 96V | G2K8P15K | TO-252 | -150V | 271mΩ |

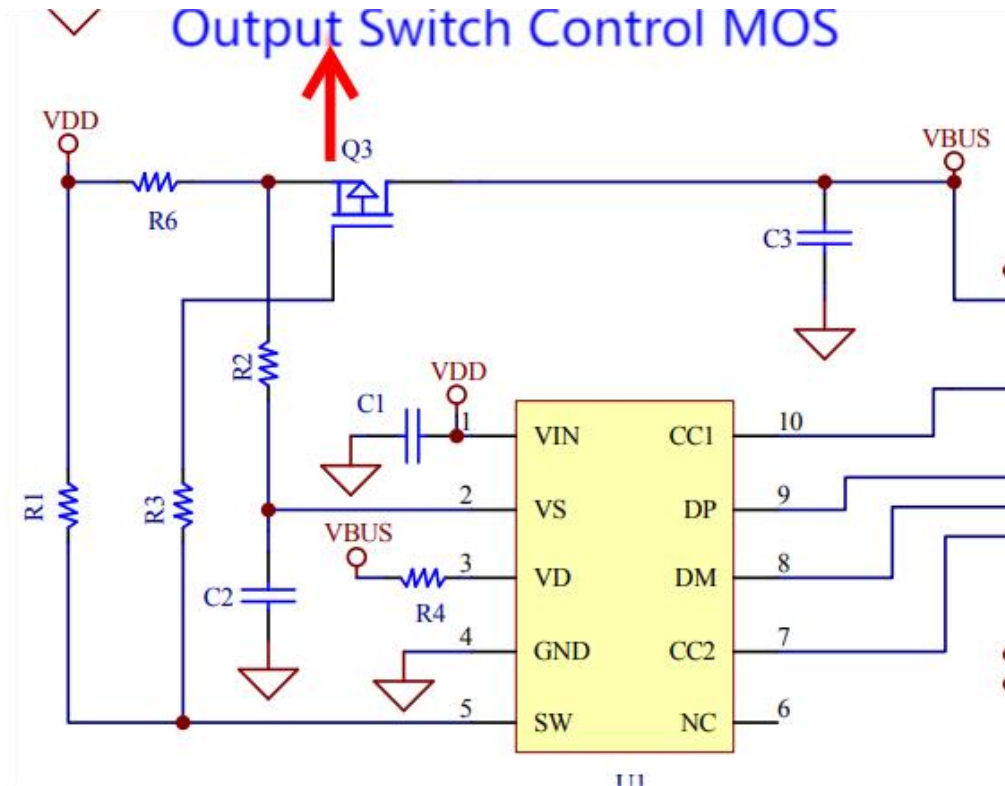
Reverse Polarity Protection

GOFORD

| Recommended Power MOSFETs | | | |
|---------------------------|-----------|------------|-------|
| Product | Package | Parameters | |
| 3401 | SOT-23 | -30V | 42mΩ |
| G500P03IE | | -30V | 42mΩ |
| G3035 | | -30V | 41mΩ |
| G16P03D3 | DFN3*3-8L | -30V | 8.5mΩ |
| G18P03D3 | | -30V | 7.5mΩ |
| G050P03S | SOP-8 | -30V | 4.5mΩ |

| Recommended Power MOSFETs | | | |
|---------------------------|-----------|------------|--------|
| Product | Package | Parameters | |
| G230P06S | SOP-8 | -60V | 18mΩ |
| G170P06S | | | 14mΩ |
| G20P06K | TO-252 | -60V | 31mΩ |
| 25P06 | | -60V | 25mΩ |
| G230P06K | | -60V | 17mΩ |
| G180P06K | | -60V | 15.5mΩ |
| G65P06K | | -60V | 13mΩ |
| G700P06H | SOT-223 | -60V | 60mΩ |
| G08P06D3 | DFN3*3-8L | -60V | 40mΩ |
| G700P06D3 | | -60V | 57mΩ |





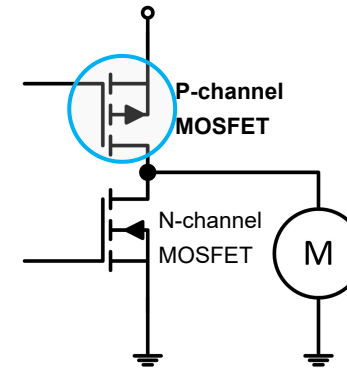
Recommended Power MOSFETs

| Product | Package | Parameters | |
|--------------------------|-----------|------------|-------|
| G090P02S | SOP-8 | -20V | 7.5mΩ |
| G16P03D3 | DFN3*3-8L | -30V | 8.5mΩ |
| G18P03D3 | | -30V | 7.5mΩ |
| G050P03K | TO-252 | -30V | 3.2mΩ |
| G7P03D2 | DFN2*2-6L | -30V | 17mΩ |

Low Voltage Motor Drive

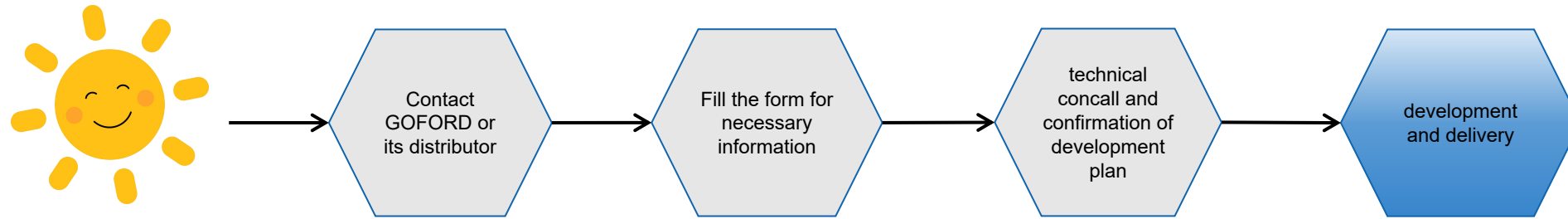
GOFORD

| Recommended Power MOSFETs | | | |
|----------------------------|------------|------------|-------------|
| Product | Package | Parameters | |
| G090P02S | SOP-8 | -20V | 7.5mΩ |
| G220P02D2 | DFN2*2-6L | -20V | 15mΩ |
| G170P02D2 | | -20V | 13mΩ |
| G16P03D3 | DFN3*3-8L | -30V | 8.5mΩ |
| G18P03D3 | | -30V | 7.5mΩ |
| G050P03K | TO-252 | -30V | 3.2mΩ |
| G7P03D2 | DFN2*2-6L | -30V | 17mΩ |
| G700P06H | SOT-223 | -60V | 60mΩ |
| G08P06D3 | DFN3*3-8L | -60V | 40mΩ |
| G700P06D3 | | -60V | 57mΩ |
| GT750P10D5 | DFN5*6-8L | -100V | 50mΩ |
| G20P10KE | TO-252 | -100V | 94mΩ |
| GT750P10K | | -100V | 56mΩ |
| G04P10HE | SOT-223 | -100V | 177mΩ |
| 6706A | SOP-8 DUAL | 30V/-30V | 16mΩ / 35mΩ |



Collaborated Development

GOFORD



Goford is very much willing to work with customer to maximize the benefit of customer. Please feel free to contact us!

Product Application

GOFORD



consumer



industrial
power



tool



auto



security



charging
station



telecome



inverter



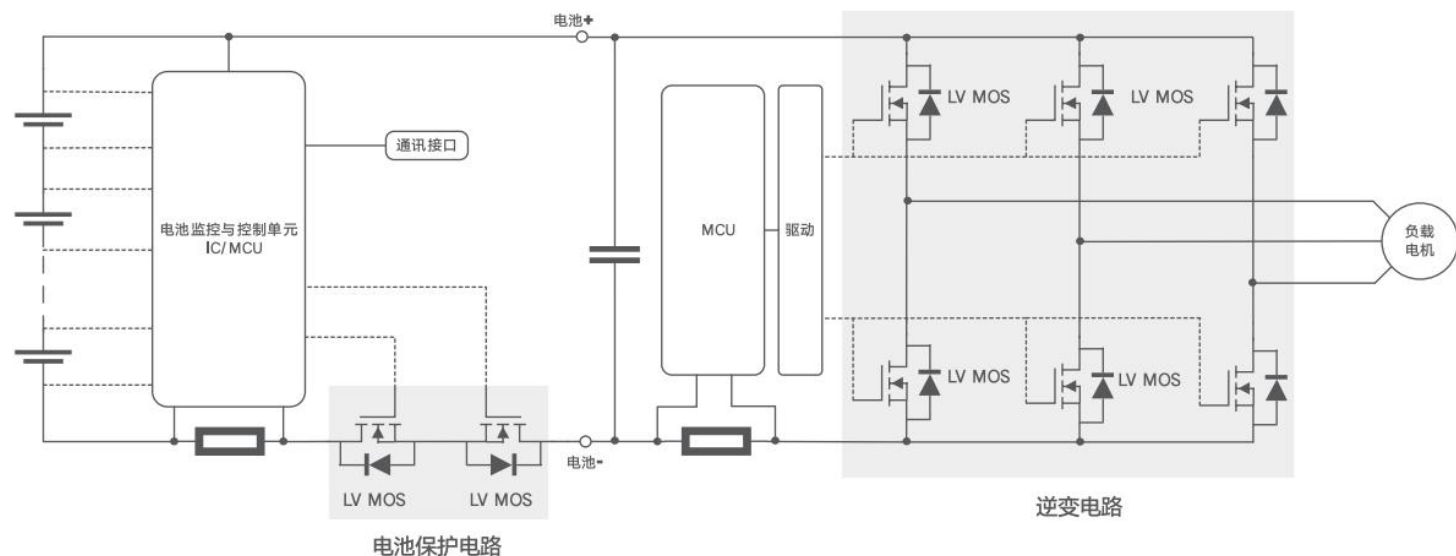
BMS



LED LIGHTING

Tool (motor)

GOFORD



Recommended Products

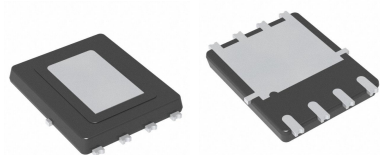
- G07P04S
- G70P04K
- G75P04K/G75P04S/
- G75P04D5/G75P04T/
- G75P04F
- 45P40
- 25P06
- G230P06K/G230P06S/
- G230P06D5/G230P06T/
- G230P06F
- G65P06K/G65P06D5/
- G65P06T/G65P06F
- G080P06M/G080P06T
- GT065P06D5/GT065P06T
- G2K8P15K/G2K8P15S
- G1K6P15K
- G900P15K/G900P15M/
- G900P15D5/G900P15T



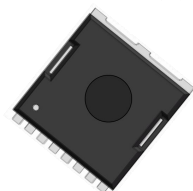
Package

GOFORD

»» DFN 5*6



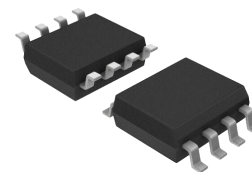
»» TOLL



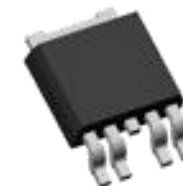
»» SOT-223



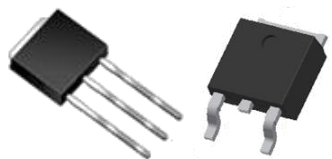
»» SOP-8



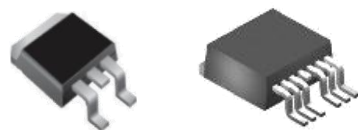
»» TO-252-4



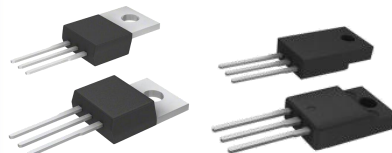
»» TO-251 TO-252



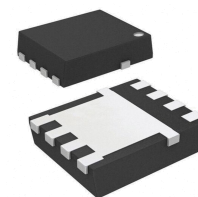
»» TO-263 TO-263-6



»» TO-220 TO-220F



»» DFN



»» SOT-23

