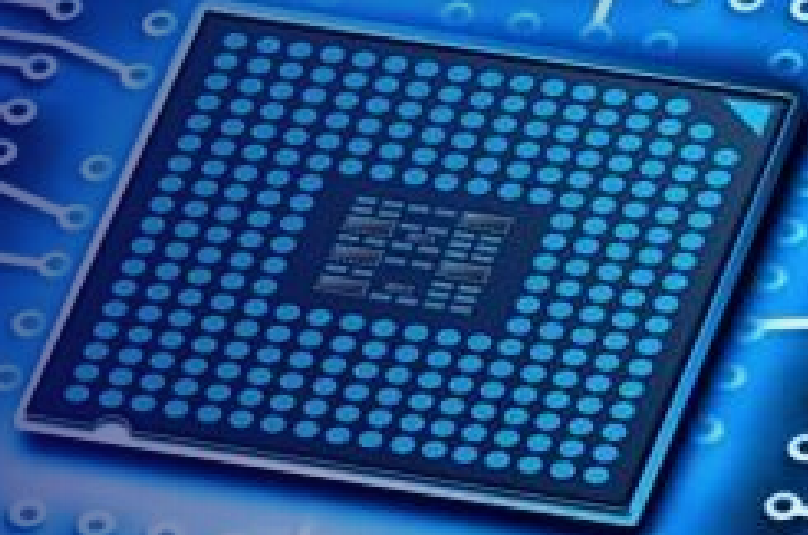


# GOFORD

## SEMICONDUCTOR

P-channel Power MOSFETs




January 2024



# Global Presentation

GOFORD



-  R&D
-  Goford
-  Distributors



**cost  
effectiveness**



**reliability**

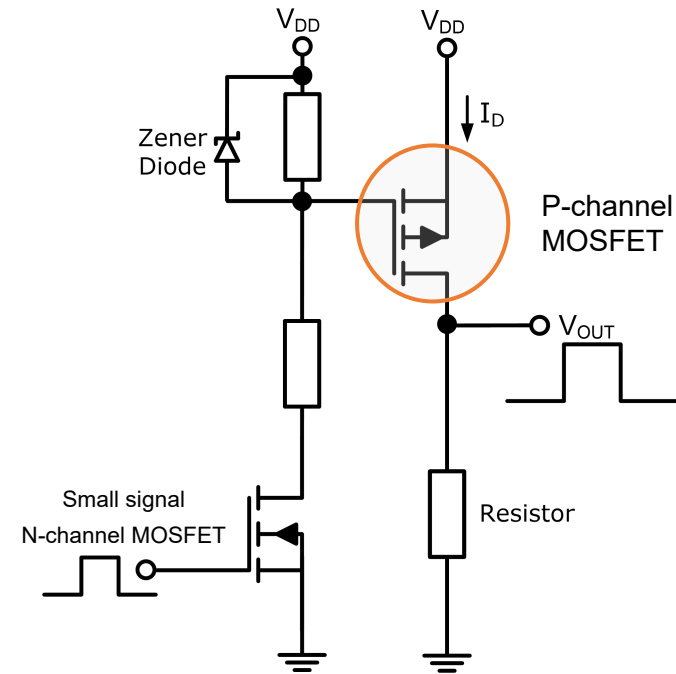
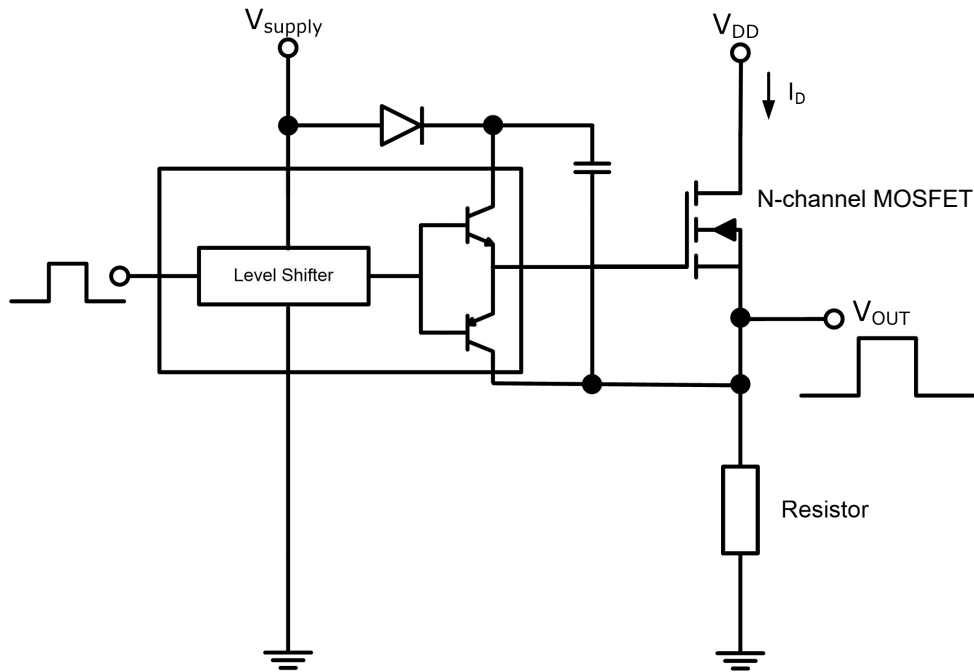


**service**



# Introduction to P-channel MOSFETs

GOFORD

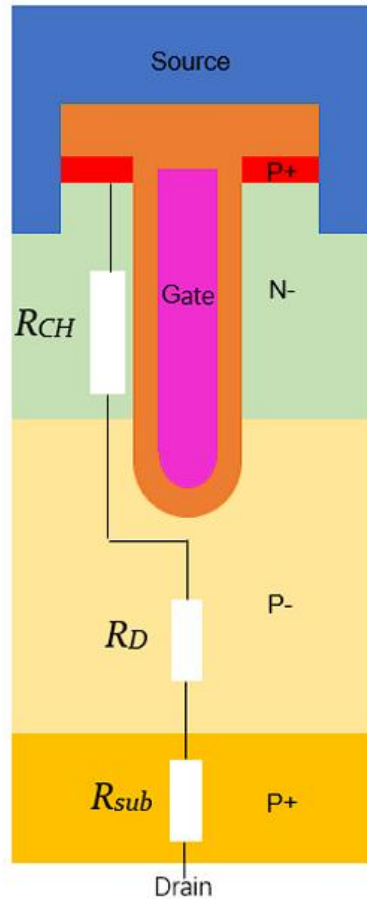


**Important note:** for the same chip size  $\rightarrow R_{DS(on)\_Pch} \approx 2.5 \times R_{DS(on)\_Nch}$

# N- versus P-channel MOSFET Structure

GOFORD

*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

$\rho_D$  : Epitaxial resistance

$W_m + W_t$  : Cell pitch

$\rho_s$  : Substrate resistivity

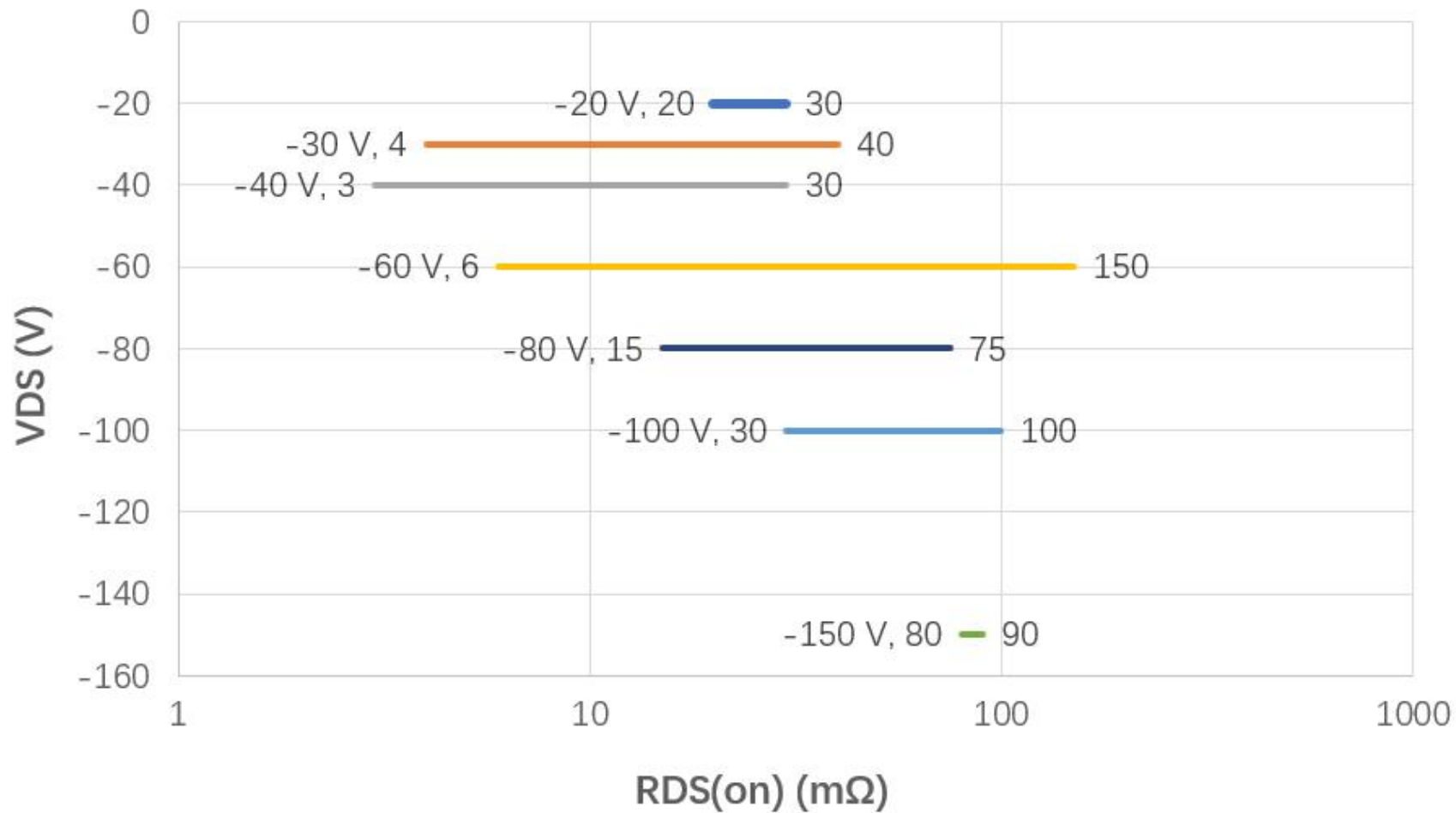
$C_{ox}$  : Gate oxide capacitance

$t_s$  : Substrate thickness

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

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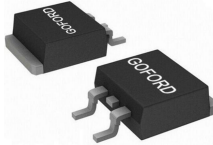
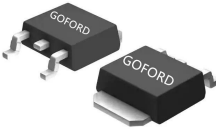
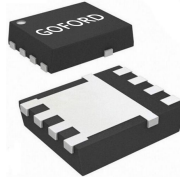
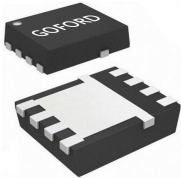
Voltage class vs  $R_{DS(on)}$







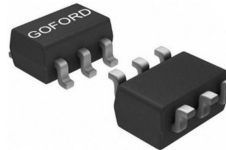
# P-channel Package Portfolio

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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

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]
<a href="#">G06P01E</a>	SOT-23	-12V	-4A	-0.6V		23mΩ	14	Standard	150
<a href="#">2301</a>		-20V	-3A	-0.65V		42mΩ	8.5	Standard	150
<a href="#">3415A</a>		-20V	-4A	-0.7V		28mΩ	10	Standard	150
<a href="#">G2305</a>		-20V	-4A	-0.7V		29mΩ	12	Standard	150
<a href="#">G09P02L</a>	SOT-23-3L	-20V	-9A	-0.7V		17mΩ	72	Standard	150
<a href="#">G350P02LLE</a>	SOT-23-6L	-20V	-4.5A	-0.7V		27mΩ	17.2	Standard	150
<a href="#">G220P02D2</a>	DFN2*2-6L	-20V	-8A	-0.7V	15mΩ	19mΩ	14	Standard	150
<a href="#">G170P02D2</a>		-20V	-16A	-0.7V		13mΩ	30	Standard	150
<a href="#">G170P02D32</a>	DFN3*3-8L	-20V	-20A	-0.7V		15mΩ	30	Standard	150
<a href="#">G45P02D3</a>		-20V	-45A	-0.65V		6mΩ	44	Standard	150
<a href="#">G075P02D5</a>	DFN5*6-8L	-20V	-45A	-0.65V		6.3mΩ	44	Standard	150
<a href="#">G040P02D5</a>		-20V	-90A	-0.65V		3.5mΩ	134	Standard	150
<a href="#">G085P02TS</a>	TSSOP-8	-20V	-8.2A	-0.55-0.9V		7mΩ	29	Standard	150
<a href="#">G090P02S</a>	SOP-8	-20V	-11A	-0.65V		7.5mΩ	47	Standard	150
<a href="#">G11S</a>		-20V	-11A	-0.75V		15mΩ	47	Standard	150
<a href="#">G70P02K</a>	TO-252	-20V	-45A	-0.65V		5.9mΩ	44	Standard	150
<a href="#">G040P02K</a>		-20V	-90A	-0.65V		3.4mΩ	134	Standard	150
<a href="#">G040P02T</a>	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]
<a href="#">2301H</a>	SOT-23	-30V	-2.8A	-1.4V	60mΩ	85mΩ	4.5	Standard	150
<a href="#">3401</a>		-30V	-4.2A	-0.8v	42mΩ	49mΩ	8.5	Standard	150
<a href="#">G500P03IE</a>		-30V	-4.6A	-0.8V	42mΩ	48mΩ	13	Standard	150
<a href="#">G3035</a>		-30V	-4.6A	-1.5V	41mΩ	61mΩ	13	Standard	150
<a href="#">G3035L</a>	SOT-23-3L	-30V	-4.1A	-1.5V	48mΩ	60mΩ	12.5	Standard	150
<a href="#">G3401L</a>		-30V	-4.4A	-0.8V	43mΩ	51mΩ	9.3	Standard	150
<a href="#">G7P03L</a>		-30V	-7A	-1.5V	19mΩ	27mΩ	29	Standard	150
<a href="#">G7P03D2</a>	DFN2*2-6L	-30V	-7A	-0.9V	17mΩ	21mΩ	19	Standard	150
<a href="#">G12P03D3</a>	DFN3*3-8L	-30V	-12A	-1.5V	16mΩ	22mΩ	24.5	Standard	150
<a href="#">G10P03</a>		-30V	-22A	-0.9V		20mΩ	44	Standard	150
<a href="#">G170P03D3</a>		-30V	-30A	-1.4V	12mΩ	17mΩ	35	Standard	150
<a href="#">G16P03D3</a>		-30V	-45A	-1.7V	8.5mΩ	12mΩ	35	Standard	150
<a href="#">G18P03D3</a>		-30V	-50A	-1.5V	7.5mΩ	11mΩ	45	Standard	150
<a href="#">G80P03D5</a>	DFN5*6-8L	-30V	-65A	-1.5V	5mΩ	6.5mΩ	95	Standard	150
<a href="#">G40P03D5</a>		-30V	-35A	-1.4V	8.5mΩ	11.5mΩ	50	Standard	150
<a href="#">G050P03D5</a>		-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]
<a href="#">G9435S</a>	SOP-8	-30V	-5.1A	-1.6V	48mΩ~55mΩ	73mΩ~105mΩ	12	Standard	150
<a href="#">G7P03S</a>		-30V	-9A	-1.6V	16mΩ	23mΩ	24.5	Standard	150
<a href="#">4435</a>		-30V	-11A	-1.4V	12mΩ	18mΩ	40	Standard	150
<a href="#">G18P03S</a>		-30V	-15A	-1.6V	8.1mΩ	10.5mΩ	58	Standard	150
<a href="#">G16P03S</a>		-30V	-16A	-1.5V	9.9mΩ	14mΩ	35	Standard	150
<a href="#">G050P03S</a>		-30V	-25A	-1.2V	4.5mΩ	5.5mΩ	111	Standard	150
<a href="#">G160P03K</a>	TO-252	-30V	-30A	-1.5V	12mΩ	17mΩ	31.2	Standard	150
<a href="#">G160P03KI</a>		-30V	-30A	-1.5V	12mΩ	17mΩ	31.2	Standard	150
<a href="#">G40P03K</a>		-30V	-40A	-1.7V	7.5mΩ	10mΩ	50	Standard	150
<a href="#">G80P03K</a>		-30V	-80A	-1.4V	4.5mΩ	6mΩ	30	Standard	150
<a href="#">G050P03K</a>	TO-220	-30V	-85A	-1.5V	3.2mΩ	4.3mΩ	111	Standard	150
<a href="#">G050P03T</a>		-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]	
<a href="#">5P40</a>	SOT-23-3L	-40V	-5A	-1.7V	57mΩ	77mΩ	14	Standard	150	
<a href="#">G07P04S</a>	SOP-8	-40V	-7A	-1.5V	14mΩ	18mΩ	31	Standard	150	
<a href="#">G75P04S</a>		-40V	-20A	-1.4V	5.3mΩ	6.9mΩ	106	Standard	150	
<a href="#">G13P04S</a>		-40V	-13A	-1.8V	13mΩ		40	Standard	150	
<a href="#">G200P04D3</a>		DFN3*3-8L	-40V	-20A	-1.7V	13mΩ	17mΩ	54	Standard	150
<a href="#">G26P04D5</a>	DFN5*6-8L	-40V	-26A	-1.5V	15mΩ	18mΩ	45	Standard	150	
<a href="#">G35P04D5</a>		-40V	-35A	-1.7V	11mΩ	15mΩ	60	Standard	150	
<a href="#">G75P04D5</a>		-40V	-80A	-1.7V	4.7mΩ	6.3mΩ	106	Standard	150	
<a href="#">G26P04K</a>	TO-252	-40V	-26A	-1.5V	13mΩ	17mΩ	42	Standard	150	
<a href="#">45P40</a>		-40V	-45A	-1.5V	10.5mΩ		42	Standard	150	
<a href="#">G75P04K</a>		-40V	-80A	-1.5V	5mΩ	6.7mΩ	106	Standard	150	
<a href="#">G90P04K</a>		-40V	-90A	-1.8V	5.8mΩ		97	Standard	150	
<a href="#">G70P04K</a>		-40V	-70A	-1.4V	7mΩ	9mΩ	42	Standard	150	
<a href="#">G450P04K</a>		-40V	-11A	-1.6V	32mΩ	45mΩ	25	Standard	150	
<a href="#">G12P04K</a>		-40V	-12A	-1.4V	29mΩ	35mΩ	25	Standard	150	
<a href="#">G15P04K</a>		-40V	-15A	-1.5V	25mΩ	30mΩ	25	Standard	150	
<a href="#">G45P40T</a>		TO-220	-40V	-45A	-1.5V	10.5mΩ	15mΩ	42	Standard	150
<a href="#">G75P04T</a>			-40V	-80A	-1.7V	5.2mΩ	6.8mΩ	106	Standard	150
<a href="#">G040P04T</a>	-40V		-180A	-1.6V	2.9mΩ	3.7mΩ	206	Standard	150	
<a href="#">G75P04F</a>	TO-220F	-40V	-54A	-1.45V	5.1mΩ	6.6mΩ	106	Standard	150	
<a href="#">G75P04FI</a>		-40V	-54A	-1.5V	6mΩ	7.5mΩ	106	Standard	150	
<a href="#">G90P04F</a>		-40V	-68A	-1.5V	6mΩ	8mΩ	42	Standard	150	
<a href="#">G75P04M</a>	TO-263	-40V	-80A	-1.7V	5.3mΩ	7.0mΩ	106	Standard	150	
<a href="#">G040P04M</a>		-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]
<a href="#">G02P06</a>	SOT-23	-60V	-1.6A	-1.8V	150mΩ	180mΩ	11.3	Standard	150
<a href="#">G1K1P06LH</a>	SOT-23-3L	-60V	-4.5A	-3.0V	93mΩ		11	Standard	150
<a href="#">G05P06L</a>		-60V	-5A	-1.7V	65mΩ	77mΩ	37	Standard	150
<a href="#">G700P06LL</a>	SOT-23-6L	-60V	-5A	-1.8V	61mΩ	74mΩ	15.8	Standard	150
<a href="#">G1K1P06LL</a>		-60V	-3A	-1.8V	85mΩ	105mΩ	25	Standard	150
<a href="#">G800P06LL</a>		-60V	-3.5A	-1.5V	60mΩ	92mΩ	12	Standard	150
<a href="#">G1K1P06HH</a>	SOT-223	-60V	-4.5A	-2.7V	90mΩ		11	Standard	150
<a href="#">G700P06H</a>		-60V	-5A	-1.7V	60mΩ	73mΩ	15.8	Standard	150
<a href="#">G6P06</a>	SOP-8	-60V	-3.5A	-1.8V	58mΩ	70mΩ	29	Standard	150
<a href="#">G400P06S</a>		-60V	-6A	-2.5V	33mΩ		46	Standard	150
<a href="#">G300P06S</a>		-60V	-6.5A	-2.4V	25mΩ		49	Standard	150
<a href="#">G230P06S</a>		-60V	-9A	-2.4V	18mΩ		62	Standard	150
<a href="#">G170P06S</a>		-60V	-12A	-2.5V	14mΩ		75	Standard	150
<a href="#">G08P06D3</a>	DFN3*3-8L	-60V	-8A	-2.8V	40mΩ		25	Standard	150
<a href="#">G700P06D3</a>		-60V	-18A	-1.7V	57mΩ	69mΩ	25	Standard	150
<a href="#">G700P06D5</a>	DFN5*6-8L	-60V	-25A	-1.7V	58mΩ	70mΩ	25	Standard	150
<a href="#">G300P06D5</a>		-60V	-40A	-2.4V	25mΩ		49	Standard	150
<a href="#">G230P06D5</a>		-60V	-48A	-2.4V	18mΩ		62	Standard	150
<a href="#">G65P06D5</a>		-60V	-65A	-2.5V	13.5mΩ		75	Standard	150
<a href="#">GT065P06D5</a>		-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]
<a href="#">G20P06K</a>	TO-252	-60V	-20A	-2.6V	31mΩ		46	Standard	150
<a href="#">G12P06K</a>		-60V	-12A	-1.7V	57mΩ	69mΩ	23	Standard	150
<a href="#">25P06</a>		-60V	-25A	-2.4V	25mΩ		37	Standard	150
<a href="#">G230P06K</a>		-60V	-60A	-2.5V	17mΩ		62	Standard	150
<a href="#">G180P06K</a>		-60V	-45A	-2.5V	15.5mΩ		46	Standard	150
<a href="#">G65P06K</a>		-60V	-65A	-2.5V	13mΩ		75	Standard	150
<a href="#">G700P06J</a>	TO-251	-60V	-23A	-1.7V	60mΩ	70mΩ	23	Standard	150
<a href="#">G700P06T</a>	TO-220	-60V	-25A	-1.6V	58mΩ	70mΩ	23	Standard	150
<a href="#">G400P06T</a>		-60V	-32A	-2.4V	30mΩ		46	Standard	150
<a href="#">G300P06T</a>		-60V	-40A	-2.5V	25mΩ		49	Standard	150
<a href="#">G230P06T</a>		-60V	-60A	-2.6V	18mΩ		62	Standard	150
<a href="#">G65P06T</a>		-60V	-65A	-2.5V	14mΩ		75	Standard	150
<a href="#">GT065P06T</a>		-60V	-82A	-1.7V	6.2mΩ	7.8mΩ	62	Standard	150
<a href="#">G115P06T</a>		-60V	-98A	-2.7V	9.3mΩ		125	Standard	150
<a href="#">G120P06T</a>		-60V	-120A	-2.5V	7mΩ		230	Standard	150
<a href="#">GT042P06T</a>		-60V	-160A	-2.3V	3.7mΩ	5.5mΩ	305	Standard	150
<a href="#">G080P06T</a>		-60V	-195A	-2.4V	6.3mΩ		186	Standard	150
<a href="#">G230P06F</a>	TO-220F	-60V	-42A	-3.0V	18mΩ		62	Standard	150
<a href="#">G65P06F</a>		-60V	-65A	-2.6V	13mΩ		75	Standard	150
<a href="#">G115P06M</a>	TO-263	-60V	-98A	-2.7V	9mΩ		125	Standard	150
<a href="#">G120P06M</a>		-60V	-120A	-2.5V	7mΩ		230	Standard	150
<a href="#">GT042P06M</a>		-60V	-160A	-2.0V	3.6mΩ	5.4mΩ	305	Standard	150
<a href="#">G170P06M</a>		-60V	-65A	-2.5V	12mΩ		75	Standard	150
<a href="#">G080P06M</a>		-60V	-195A	-2.4V	6.2mΩ		186	Standard	150

## P-channel: - 80 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]
<a href="#">GT700P08S</a>	SOP-8	-80V	-6.5A	-3V	60mΩ		75	Standard	150
<a href="#">GT700P08D3</a>	DFN3*3-8L	-80V	-16A	-3V	57mΩ		75	Standard	150
<a href="#">GT180P08D5</a>	DFN5*6-8L	-80V	-78A	-1.8V	14mΩ	16mΩ	62.1	Standard	150
<a href="#">GT700P08K</a>	TO-252	-80V	-20A	-3V	60mΩ		75	Standard	150
<a href="#">G20P08K</a>		-80V	-20A	-1.7V	52mΩ	58mΩ	48	Standard	150
<a href="#">GT750P08K</a>		-80V	-28A	-2V	52mΩ	65mΩ	36	Standard	150
<a href="#">GT700P08T</a>	TO-220	-80V	-25A	-3V	58mΩ		75	Standard	150
<a href="#">GT180P08T</a>		-80V	-89A	-1.8V	14mΩ	16mΩ	62	Standard	150
<a href="#">GT180P08M</a>	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]
<a href="#">GT6K2P10IH</a>	SOT-23	-100V	-1A	-2.45V	545mΩ		10	Standard	150
<a href="#">G04P10HE</a>	SOT-223	-100V	-4A	-1.55V	177mΩ	190mΩ	25	Standard	150
<a href="#">G2K2P10D3E</a>	DFN3*3-8L	-100V	-10A	-1.6V	175mΩ	188mΩ	33	Standard	150
<a href="#">GT750P10D5</a>	DFN5*6-8L	-100V	-24A	-1.8V	50mΩ	62mΩ	40	Standard	150
<a href="#">G2K2P10SE</a>	SOP-8	-100V	-3.5A	-1.6V	170mΩ	180mΩ	23	Standard	150
<a href="#">GT6K2P10KH</a>	TO-252	-100V	-4.3A	-2.5V	525mΩ		10	Standard	150
<a href="#">G12P10K</a>		-100V	-12A	-1.6V	178mΩ	192mΩ	33	Standard	150
<a href="#">G12P10KE</a>		-100V	-12A	-1.7V	178mΩ	192mΩ	33	Standard	150
<a href="#">G20P10KE</a>		-100V	-20A	-1.5V	94mΩ		70	Standard	150
<a href="#">GT750P10K</a>		-100V	-24A	-2.2V	56mΩ	73mΩ	40	Standard	150
<a href="#">GT500P10K</a>		-100V	-30A	-2V	45mΩ	54mΩ	36	Standard	150
<a href="#">GT400P10K</a>		-100V	-35A	-1.7V	29mΩ	34mΩ	41	Standard	150
<a href="#">G12P10TE</a>		TO-220	-100V	-12A	-1.9V	170mΩ	180mΩ	33	Standard
<a href="#">GT400P10T</a>	-100V		-35A	-1.9V	28mΩ	33mΩ	41	Standard	150
<a href="#">GT250P10T</a>	-100V		-56A	-3.1V	25mΩ		73	Standard	150
<a href="#">GT750P10M</a>	TO-263	-100V	-24A	-2V	53mΩ	65mΩ	40	Standard	150
<a href="#">GT400P10M</a>		-100V	-35A	-1.7V	29mΩ	33mΩ	41	Standard	150
<a href="#">GT250P10M</a>		-100V	-56A	-2.8V	27mΩ		73	Standard	150
<a href="#">GT240P10M</a>		-100V	-60A	-1.4V	19mΩ	22mΩ	60	Standard	150

# P-channel: - 150 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]
<a href="#">G01P15L</a>	SOT-23-3L	-150V	-1A	-2V	0.72Ω	0.78Ω	12	Standard	150
<a href="#">G01P15LL</a>	SOT-23-6L	-150V	-1A	-2V	0.77Ω		12	Standard	150
<a href="#">G900P15D5</a>	DFN5*6-8L	-150V	-35A	-2.5V	65mΩ		27	Standard	150
<a href="#">G2K8P15S</a>	SOP-8	-150V	-2.2A	-2.2V	277mΩ		11	Standard	150
<a href="#">G6K8P15SE</a>	SOP-8	-150V	-6A	-2.6V	660mΩ		11	Standard	150
<a href="#">G2K8P15K</a>	TO-252	-150V	-12A	-2.2V	271mΩ		11	Standard	150
<a href="#">G6K8P15KE</a>	TO-252	-150V	-12A	-2.5V	660mΩ		11	Standard	150
<a href="#">G1K6P15K</a>	TO-252	-150V	-24A	-2.5V	132mΩ		22	Standard	150
<a href="#">GT1K2P15K</a>	TO-252	-150V	-27A	-2.0V	90mΩ	100mΩ	86	Standard	150
<a href="#">G900P15K</a>	TO-252	-150V	-35A	-2.5V	65mΩ		27	Standard	150
<a href="#">G900P15T</a>	TO-220	-150V	-35A	-2.5V	62mΩ		27	Standard	150
<a href="#">G900P15M</a>	TO-263	-150V	-35A	-2.6V	62mΩ		27	Standard	150
<a href="#">G450P15M</a>	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]
<a href="#">G4953S</a>	SOP-8 DUAL	-30V	-5A	-1.4V	37mΩ	52mΩ	11	Standard	150
<a href="#">G220P03S2</a>		-30V	-9A	-1.5V	17mΩ	24mΩ	24.5	Standard	150
<a href="#">G170P03S2</a>		-30V	-11A	-1.6V	15mΩ	20mΩ	40	Standard	150
<a href="#">G120P03S2</a>		-30V	-16A	-1.6V	11mΩ	15mΩ	35	Standard	150
<a href="#">G200P04S2</a>		-40V	-9A	-1.5V	16mΩ	20mΩ	42	Standard	150
<a href="#">G1K8P06S2</a>		-60V	-3.2A	-1.9V	140mΩ	175mΩ	11.3	Standard	150
<a href="#">G2K2P10S2E</a>		-100V	-3.5A	-1.6V	170mΩ	180mΩ	23	Standard	150
<a href="#">G220P03D32</a>	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]
<a href="#">G1NP02LLE</a>	SOT-23-6L DUAL	20V/-20V	1.3A/-1.1A	0.55V/-0.55V		170mΩ/380mΩ	1/1.22	Standard	150
<a href="#">6703</a>		20V/-20V	2.9A/-3A	0.85V/-0.7V		30mΩ~45mΩ / 80mΩ~110mΩ	4	Standard	150
<a href="#">G300C03L6</a>		30V/-30V	5.6A/-4.2A	1V/-0.8V	22mΩ / 43mΩ	25mΩ / 51mΩ	16/8.5	Standard	150
<a href="#">6706</a>	SOP-8 DUAL	20V/-20V	6.5A/-5A	0.7V/-0.7V		12mΩ~18mΩ / 23mΩ~28mΩ	5.2/9.2	Standard	150
<a href="#">6706A</a>		30V/-30V	6.5A/-5A	1.5V/-1.6V	16mΩ / 35mΩ	23mΩ / 54mΩ	14.8/11	Standard	150
<a href="#">G05NP04S</a>		40V/-40V	4.5A/-10A	1.25V/--1.9V	27.5mΩ/26mΩ	35mΩ/28mΩ	8.9/13	Standard	150
<a href="#">G4614</a>		40V/-40V	6A/-7A	2.0V/-1.5V	26mΩ/25mΩ	37mΩ/32mΩ	15/25	Standard	150
<a href="#">G4616</a>		40V/-40V	8A/-7A	1.5V/-1.5V	15mΩ/28mΩ	20mΩ/36mΩ	45639	Standard	150
<a href="#">G06NP06DS2</a>		60/-60V	3A/-6A	0.9V/-1.7V	63mΩ/360mΩ	66mΩ/73mΩ	45472	Standard	150
<a href="#">G05NP06S2</a>		60V/-60V	5A/-3.1A	1.5V/-1.7V	28mΩ/62mΩ	31mΩ/72mΩ	22/37	Standard	150
<a href="#">G06NP06S2</a>		60/-60V	6A/-6A	1.5V/-2.5V	30mΩ/37mΩ	33mΩ	22/25	Standard	150
<a href="#">G1K2C10S2</a>		100V/-100V	3A/-3.5A	1.5V/-1.8V	110mΩ/165mΩ	120mΩ/175mΩ	22/23	Standard	150
<a href="#">G05NP10S</a>		100V/-100V	5A/-6A	2.2V/-2.2V	127mΩ/193mΩ	144mΩ/~	18/25	Standard	150
<a href="#">G100C04D52</a>	DFN5*6-8L DUAL	40V/-40V	40A/-24A	1.8V/--1.6V	7mΩ/13mΩ	9mΩ/18mΩ	29/45	Standard	150
<a href="#">G18NP06Y</a>	TO-252-4 DUAL	60V/-60V	18A/-18A	1.5V/-2.5V	26mΩ/33mΩ	30mΩ	22/25	Standard	150
<a href="#">G180C06Y</a>		60V/-60V	50A/-60A	1.5/-3.0V	14mΩ/19mΩ	16mΩ	36/62	Standard	150

# P-channel MOSFET Application Areas

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Auto



Inverter



Telecome



Tool



LED Lighting



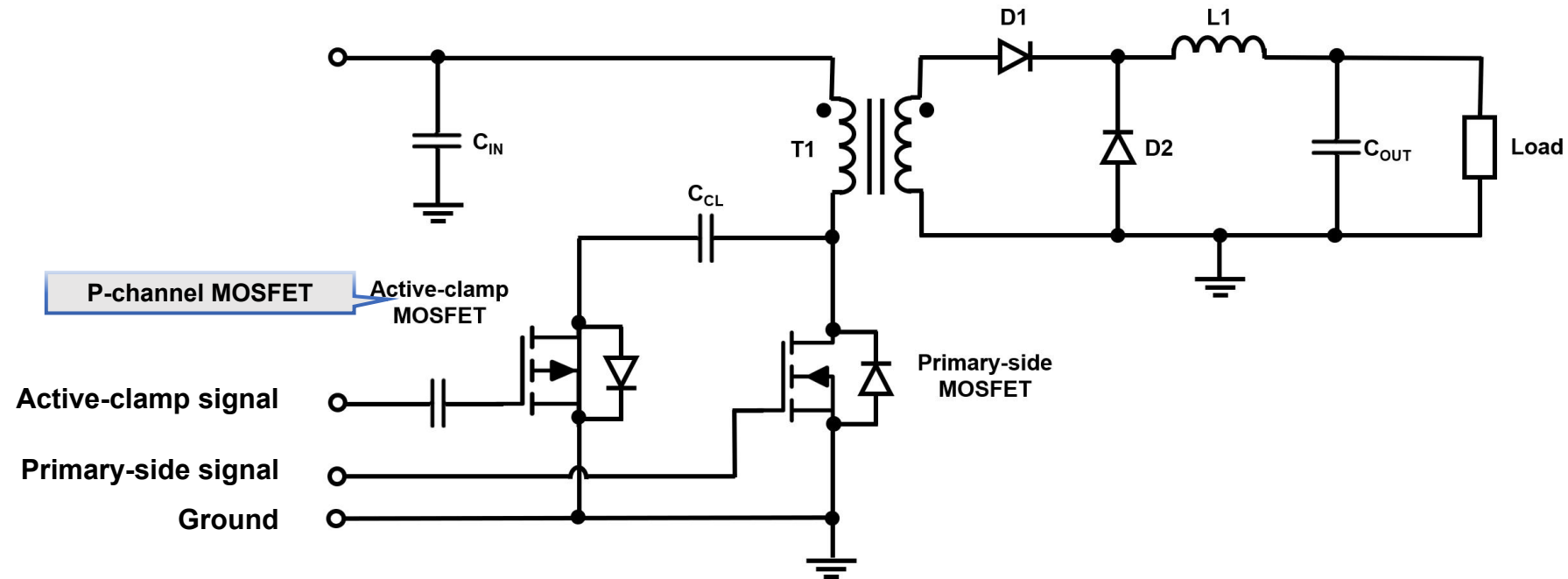
BMS



Consumer

# Active-clamp Forward Converter

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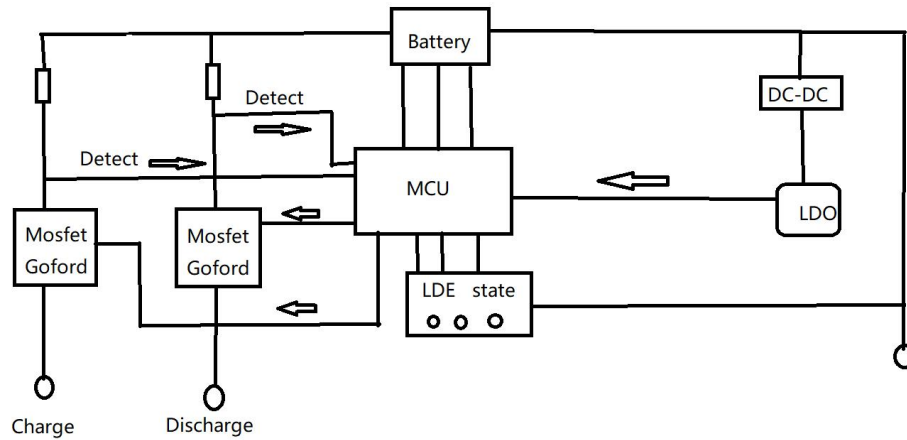


Recommended Power MOSFETs

Product	Package	Parameters	
<a href="#">G2K8P15S</a>	SOP-8	-150V	277m $\Omega$
<a href="#">G6K8P15SE</a>	SOP-8	-150V	660m $\Omega$
<a href="#">G900P15D5</a>	DFN5*6-8L	-150V	65m $\Omega$

# Battery Protection Unit

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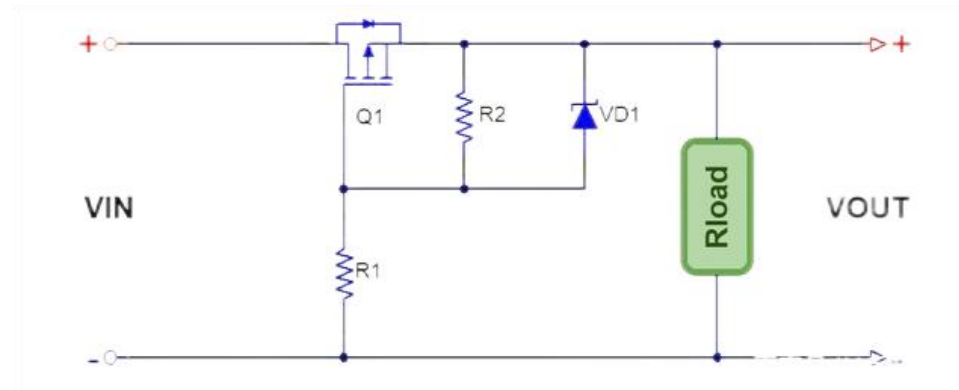
Battery Voltage	Recommended Power MOSFETs			
	Product	Package	Parameters	
18V	<a href="#">G050P03S</a>	SOP-8	-30V	4.5mΩ
	<a href="#">G18P03S</a>	SOP-8		8.1mΩ
	<a href="#">G40P03K</a>	TO-252		7.5mΩ
	<a href="#">G80P03K</a>			4.5mΩ
	<a href="#">G050P03K</a>	DFN3*3-8L		3.2mΩ
	<a href="#">G170P03D3</a>	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

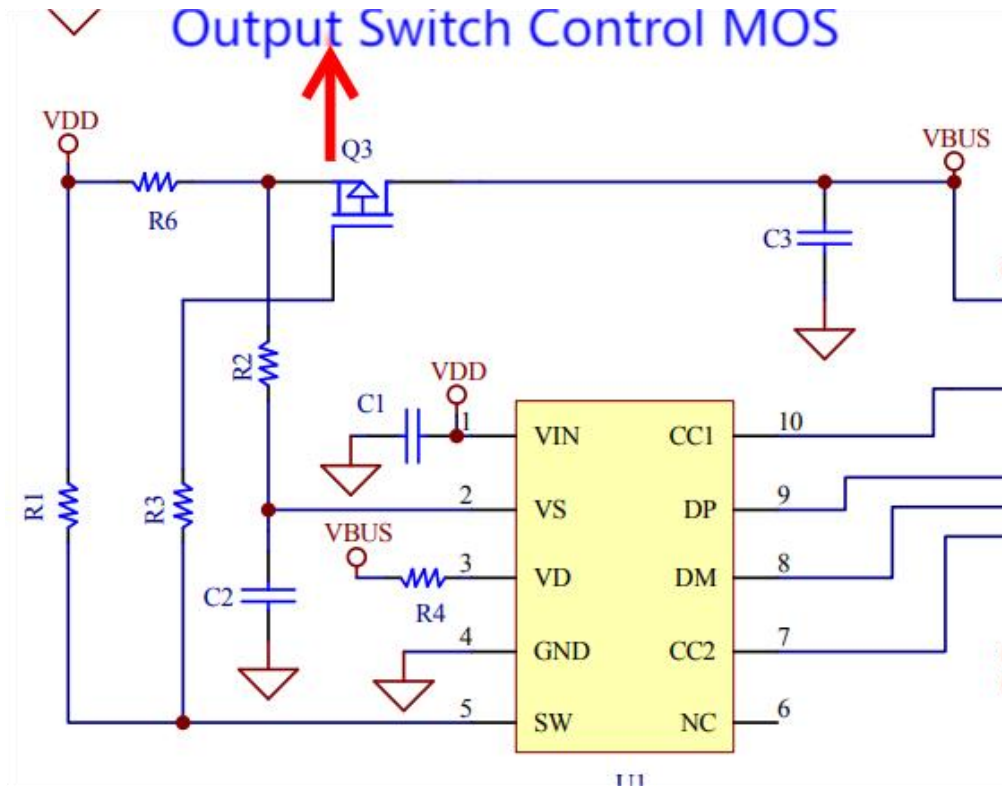
# Reverse Polarity Protection

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Recommended Power MOSFETs			
Product	Package	Parameters	
<a href="#">3401</a>	SOT-23	-30V	42mΩ
<a href="#">G500P03IE</a>		-30V	42mΩ
<a href="#">G3035</a>		-30V	41mΩ
<a href="#">G16P03D3</a>	DFN3*3-8L	-30V	8.5mΩ
<a href="#">G18P03D3</a>		-30V	7.5mΩ
<a href="#">G050P03S</a>	SOP-8	-30V	4.5mΩ

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



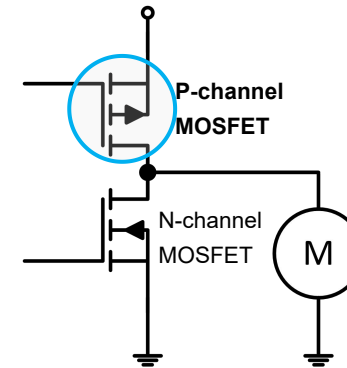


Recommended Power MOSFETs			
Product	Package	Parameters	
<a href="#">G090P02S</a>	SOP-8	-20V	7.5mΩ
<a href="#">G16P03D3</a>	DFN3*3-8L	-30V	8.5mΩ
<a href="#">G18P03D3</a>		-30V	7.5mΩ
<a href="#">G050P03K</a>	TO-252	-30V	3.2mΩ
<a href="#">G7P03D2</a>	DFN2*2-6L	-30V	17mΩ

# Low Voltage Motor Drive

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



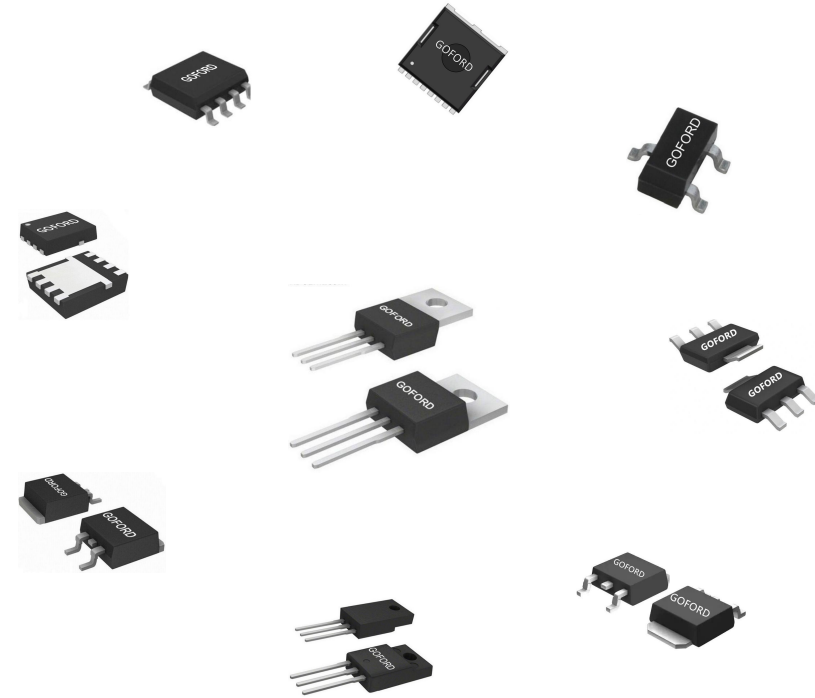


# P-channel MOSFETs Summary

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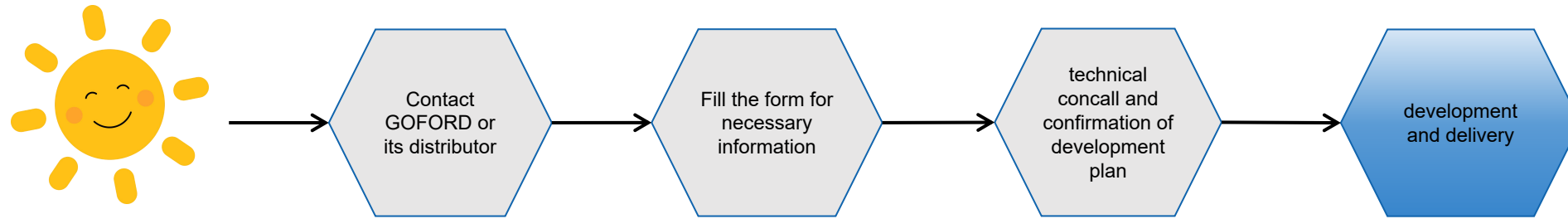
## Features and benefits

- 🌐 Vds range P -150V to -12V;
- 🌐 Fast switching;
- 🌐 Avalanche ruggedness;
- 🌐 Simplified design;
- 🌐 Energy efficiency;
- 🌐 ESD protected products available;
- 🌐 Various packages;
- 🌐 Tailor-made available



# Collaborated Development

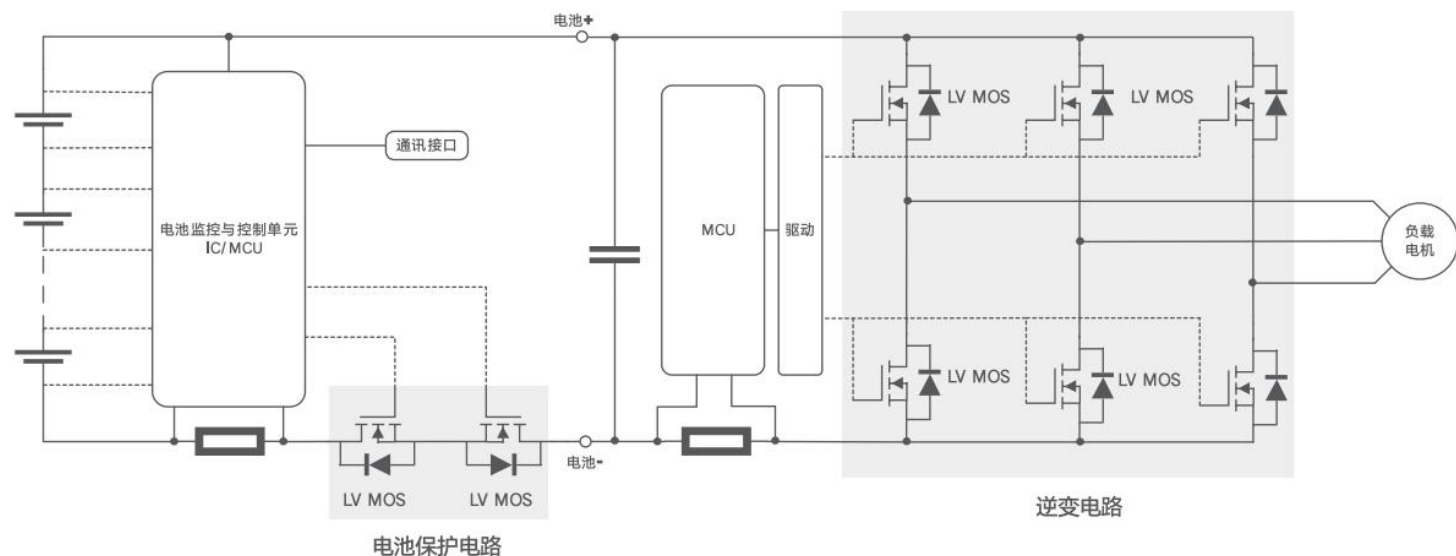
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Goford is very much willing to work with customer to maximize the benefit of customer. Please feel free to contact us!

# Tool (motor)

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## Recommended Products

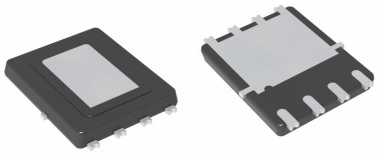
- G07P04S
- G70P04K
- G75P04K/G75P04S/
- G75P04D5/G75P04T/
- G75P04F
- 45P40
- 25P06
- G230P06K/G230P06S/
- G230P06D5/G230P06T/
- G230P06F
- G65P06K/G65P06D5/
- G65P06T/G65P06F
- G080P06M/G080P06T
- GT065P06D5/GT065P06T
- G2K8P15K/G2K8P15S
- G1K6P15K
- G900P15K/G900P15M/
- G900P15D5/G900P15T



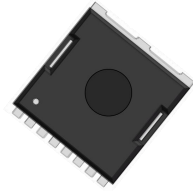
# Package

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»» DFN 5\*6



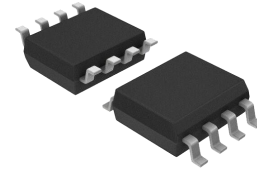
»» TOLL



»» SOT-223



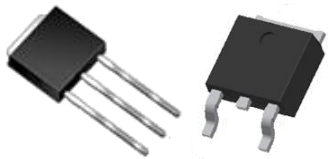
»» SOP-8



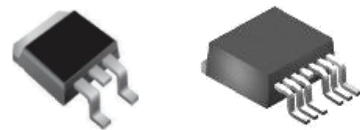
»» TO-252-4



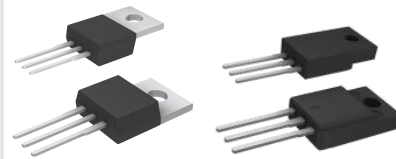
»» TO-251 TO-252



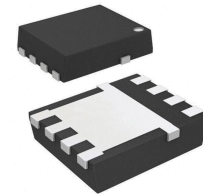
»» TO-263 TO-263-6



»» TO-220 TO-220F



»» DFN



»» SOT-23

