

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-100V	35mΩ@-10V	-30A
	45mΩ@-4.5V	



合肥矽普半导体

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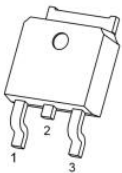
Feature

- VDS -100V
- ID -30A
- $R_{DS(ON)}$ (at VGS=10V) < 50 mohm
- Fast Switching

Applications

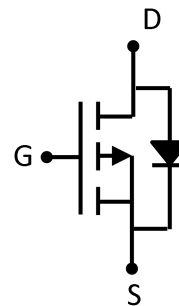
- Motor control
- Switching Regulators
- Isolated DC/DC convertor
- Alertor

Package

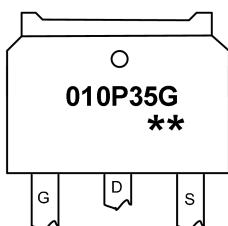


TO-252(1:G 2:D 3:S)

Circuit diagram



Marking



Order Information

Device	Package	Unite/Tape
SP010P35GTH	TO-252	2500

Absolute maximum ratings (Ta=25°C unless otherwise noted)

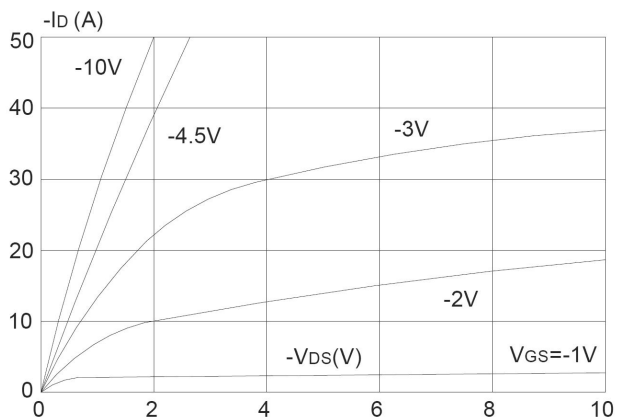
Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	-30	A
Drain Current – Pulsed	I_{DM}	-120	A
Power Dissipation (TC=25°C)	P_D	120	W
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.04	°C/W
Storage Temperature Range	T_{STG}	-50 to 150	°C
Operating Junction Temperature Range	T_J	-50 to 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

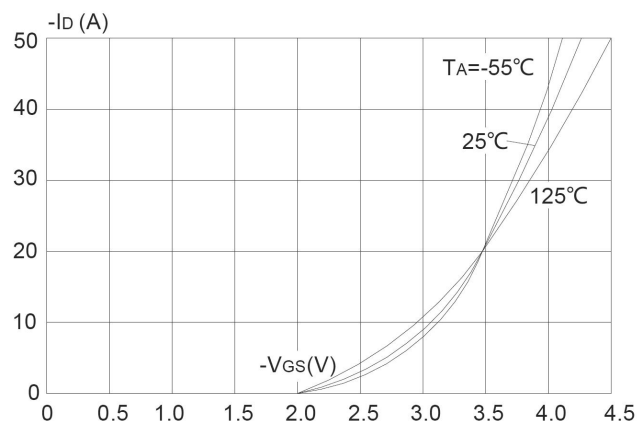
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	B _{VDSS}	VGS=0V , ID=-250uA	-100	---	---	V
Drain-Source Leakage Current	IDSS	VDS=-100V , VGS=0V	---	---	-1	uA
Gate-Source Leakage Current	IGSS	VGS=± 20V , VDS=0V	---	---	± 100	nA
Gate Threshold Voltage	VGS(th)	VGS=VDS , ID =-250uA	-1	-1.6	-2.5	V
Static Drain-Source On-Resistance	RDS(ON)	VGS=-10V , ID=-15A	---	35	50	mΩ
		VGS=-4.5V , ID=-10A	---	45	65	mΩ
Dynamic Characteristics						
Total Gate Charge	Qg	VGS=-10V,VDS=-50V,ID=-5A	---	41	---	nC
Gate-Source Charge	Qgs		---	8.1	---	
Gate-Drain Charge	Qgd		---	8.2	---	
Turn-On Delay Time	Td(on)	VGS=-10V,VDD=-50V, ID=-5A, RGEN=6Ω	---	13	---	ns
Rise Time	Tr		---	37	---	
Turn-Off Delay Time	Td(off)		---	101	---	
Fall Time	Tf		---	104	---	
Input Capacitance	Ciss	VDS=-50V,VGS=0V,f=1MHZ	---	2205	---	pF
Output Capacitance	Coss		---	197	---	
Reverse Transfer Capacitance	Crss		---	14	---	
Drain-Source Body Diode Characteristics						
Continuous Source Current	Is	VG=VD=0V , Force Current	---	---	-30	A
Diode Forward Voltage	VSD	VGS=0V , IS=-1A	---	---	-1.2	V

Typical Characteristics

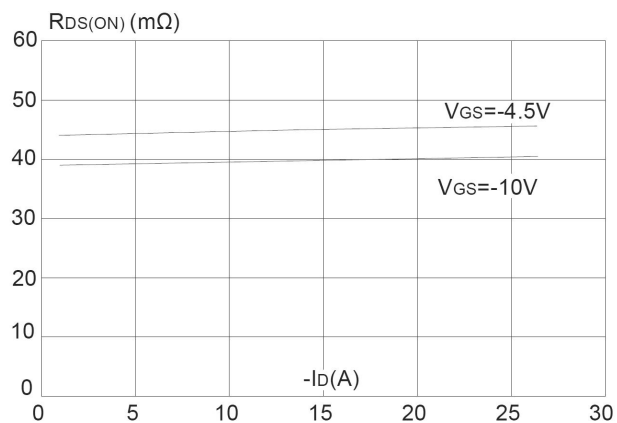
Output Characteristics



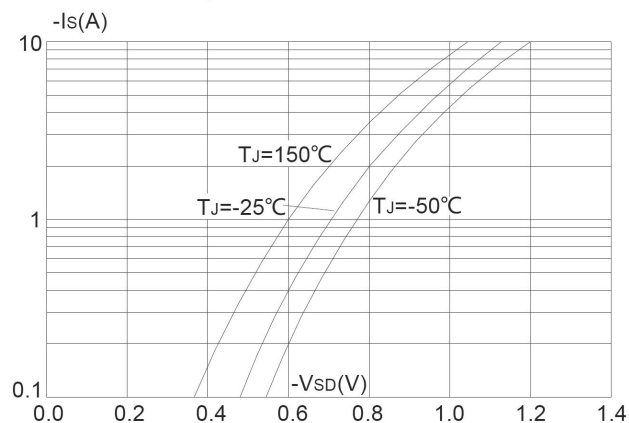
Typical Transfer Characteristics



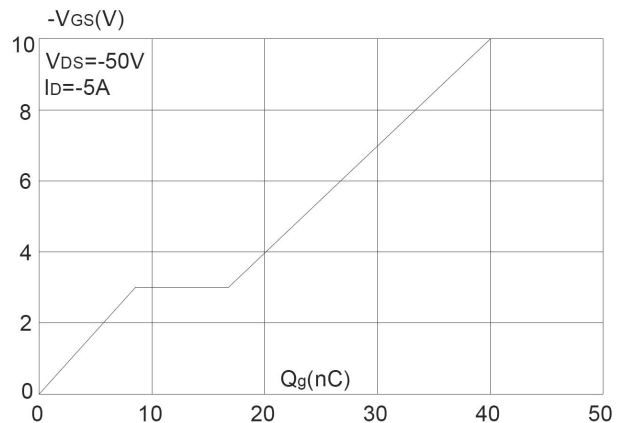
On-resistance vs. Drain Current



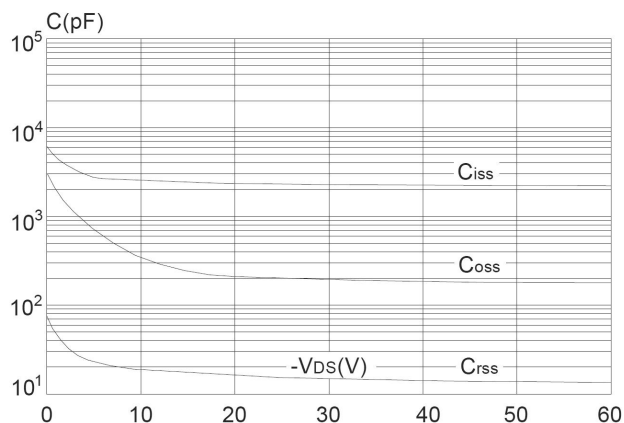
Body Diode Characteristics



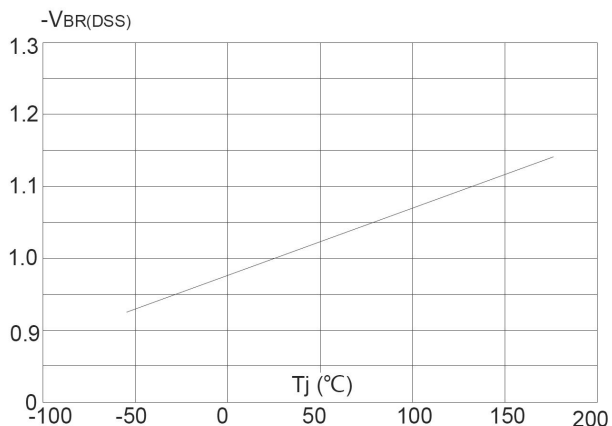
Gate Charge Characteristics



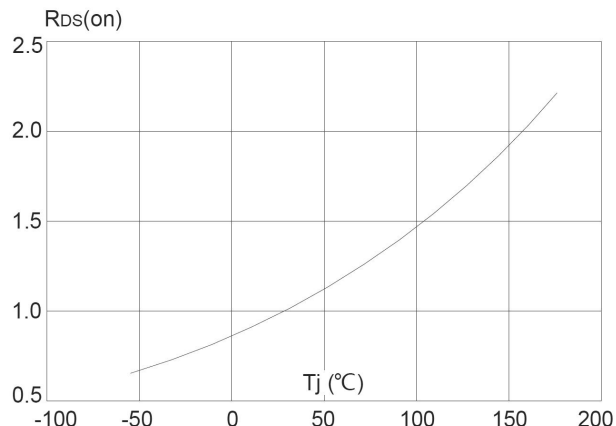
Capacitance Characteristics



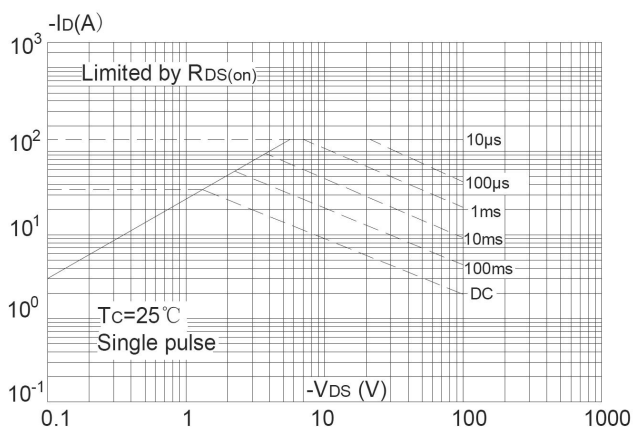
Normalized Breakdown Voltage vs. Junction Temperature



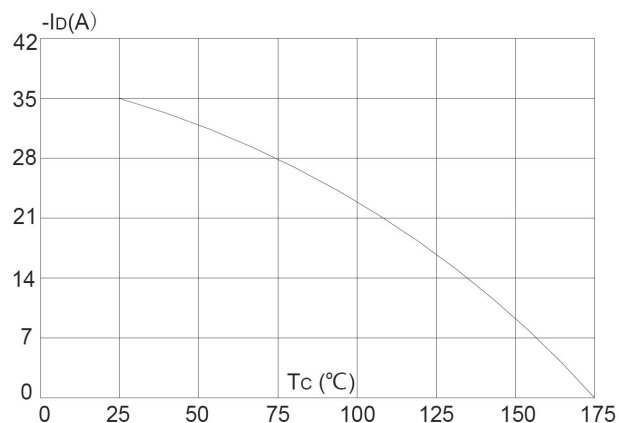
Normalized on Resistance vs. Junction Temperature



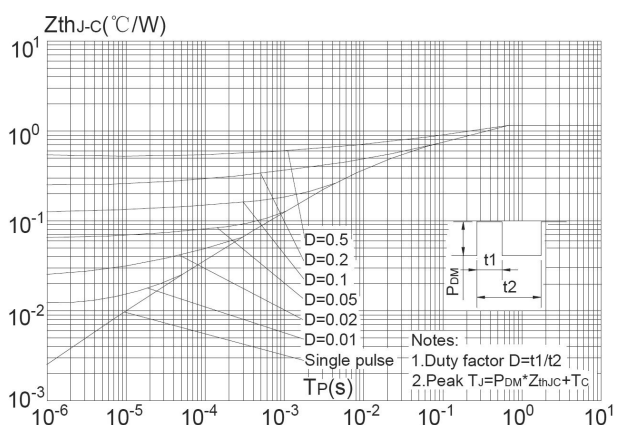
Maximum Safe Operating Area



Maximum Continuous Drain Current vs. Case Temperature

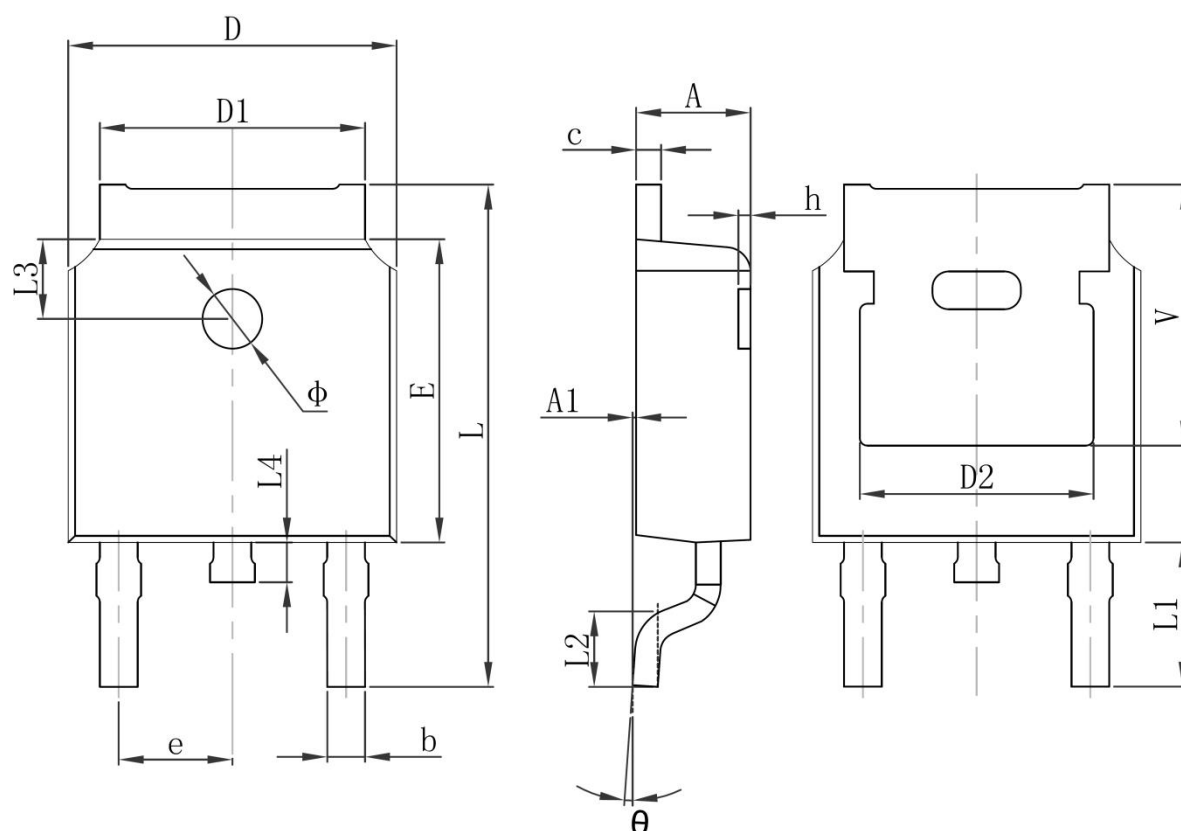


Maximum Effective Transient Thermal Impedance, Junction-to-Case





TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	