Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	5.8mΩ@-10V	-120A
	7mΩ@-4.5V	

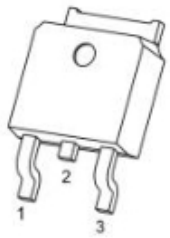
Feature

- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance

Application

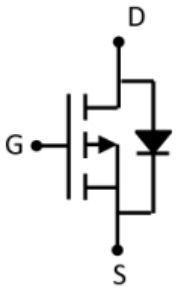
- Load Switches, Adaptor Switch
- Notebook PCs

Package

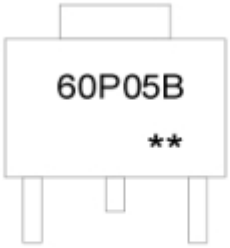


TO-263(G:1 D:2 S:3)

Circuit diagram



Marking



60P05B =Device Code
**** **=Week Code**

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous（Tc=25℃, Silicon limited）	I_D	-200	A
Drain Current-Continuous（Tc=25℃, Package limited）		-120	
Pulsed Drain Current	I_{DM}	-480	A
Single Pulse Avalanche Energy	E_{AS}	227	mJ
Maximum Power Dissipation（Tc=25℃）	P_D	375	W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.33	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	℃

Electrical characteristics

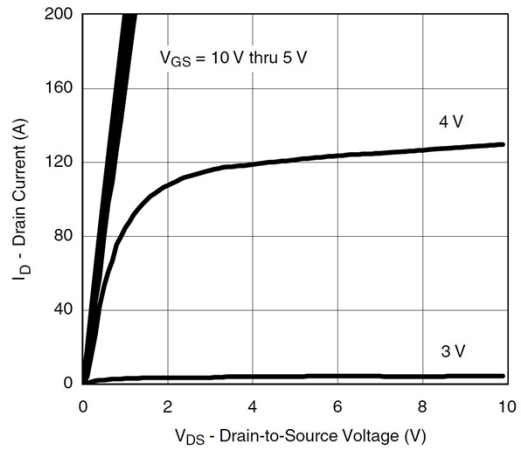
(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-48V, V_{GS} = 0V			-1	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.5	-2	V
Drain-Source On-Resistance[1]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-30A		5.8	7.3	mΩ
		V_{GS} =-4.5V, I_D =-20A		7	9.5	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-25V, V_{GS}=0V, f=1MHz		11431		pF
Output Capacitance	C_{oss}			1189		
Reverse Transfer Capacitance	C_{rss}			864		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{DD} =-30V, R_L=0.27Ω, V_{GEN}=-10V, R_{GEN}=1Ω		19.8		nS
Turn-on Rise Time	T_r			26.1		
Turn-off Delay Time	$T_{d(off)}$			114		
Turn-off Fall Time	T_f			52.7		
Total Gate Charge	Q_g	V_{GS}=-30V,V_{DS}=-10V, I_D=-110A		235.5		nC
Gate-Source Charge	Q_{gs}			52.1		
Gate-Drain Charge	Q_{gd}			63.2		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_{SD}=-1A,V_{GS}=0V			-1.2	V

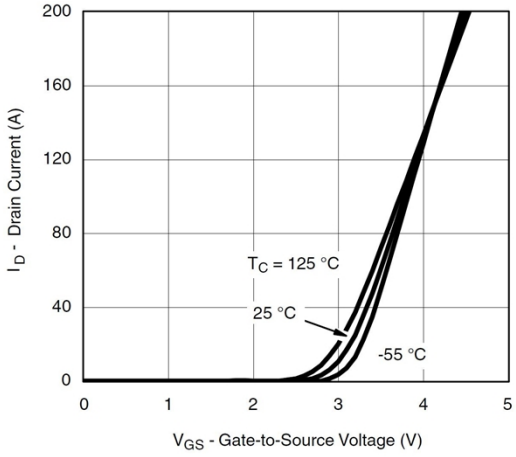
Note:

1. EAS condition: T_j=25℃,V_{DD}=-30V,V_G=-10V,L=0.1mH,Rg=25Ω

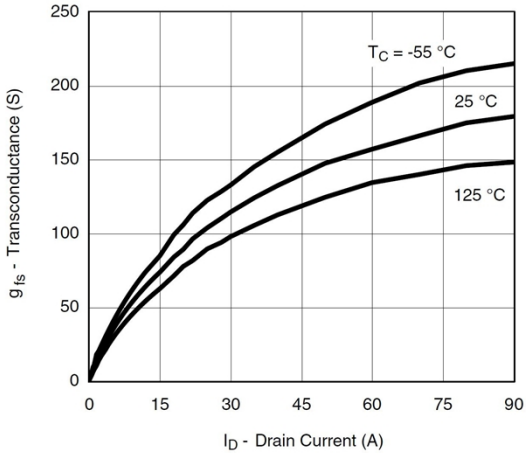
Typical Characteristics



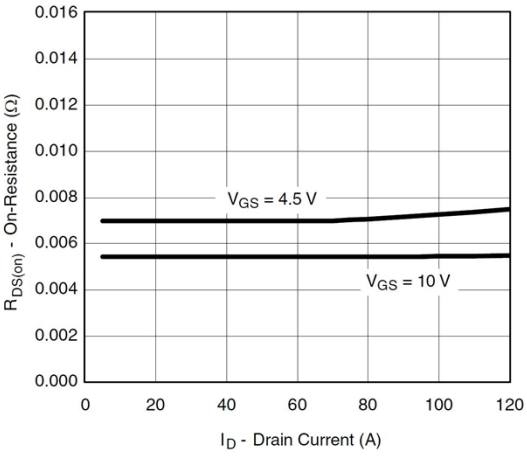
Output Characteristics



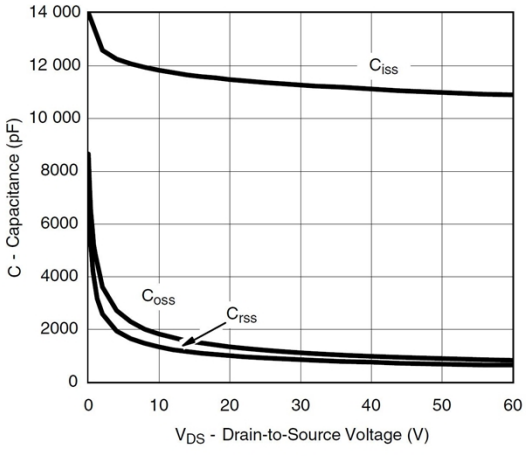
Transfer Characteristics



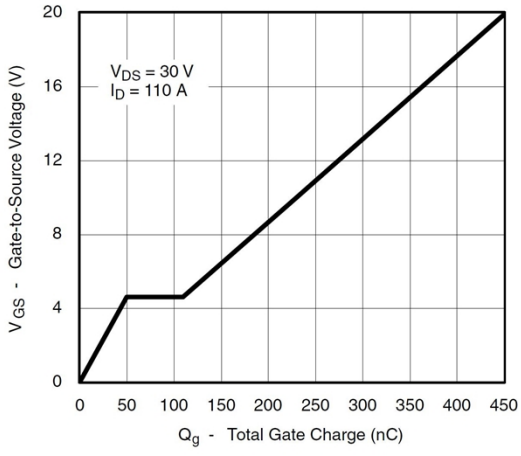
Transconductance



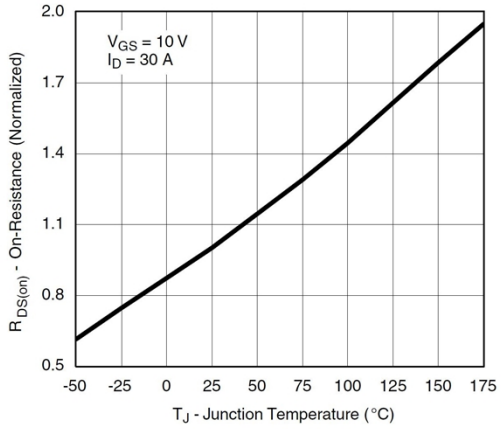
On-Resistance vs. Drain Current



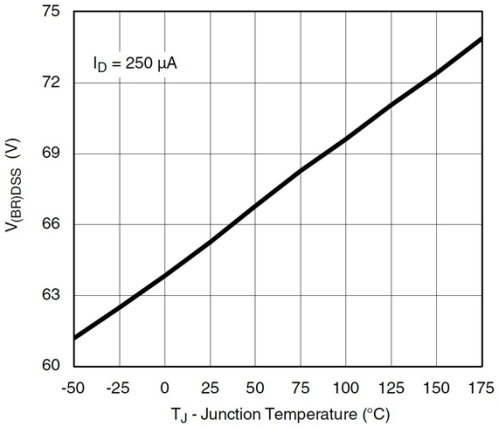
Capacitance



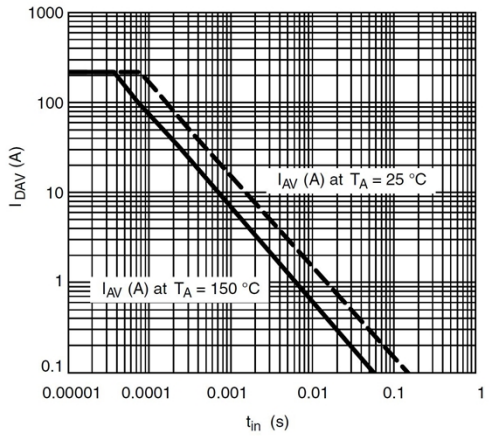
Gate Charge



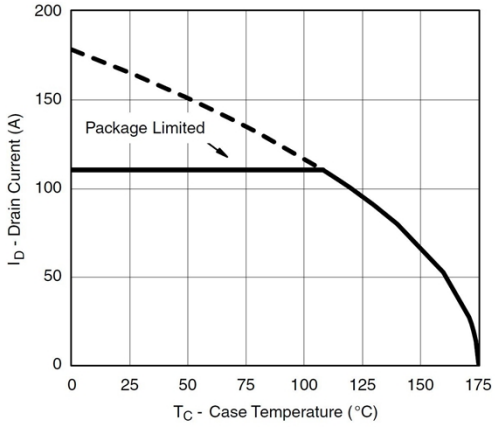
On-Resistance vs. Junction Temperature



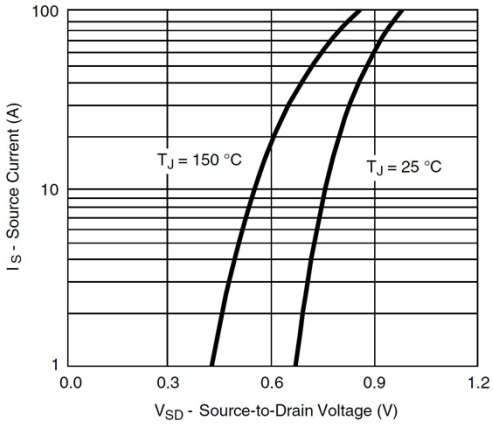
Drain Source Breakdown vs. Junction Temperature



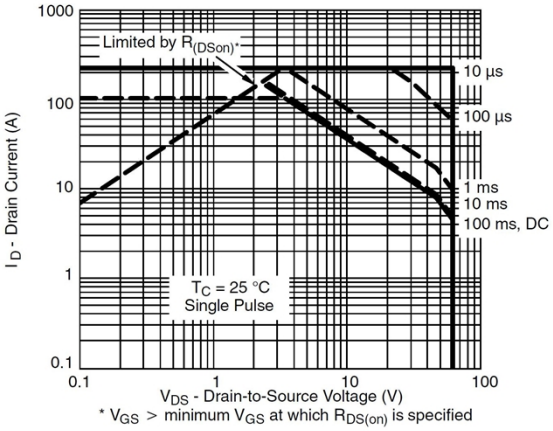
Avalanche Current vs. Time



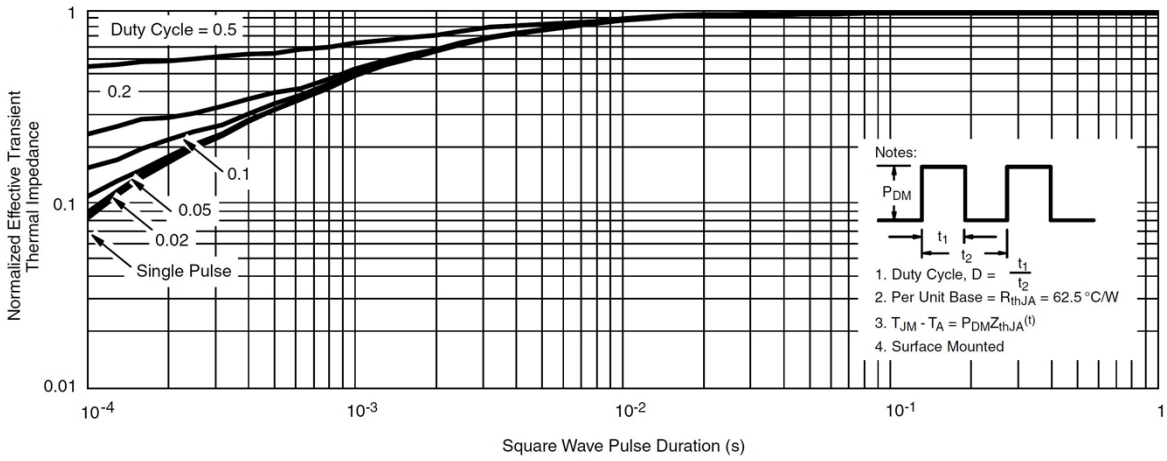
Maximum Avalanche and Drain Current vs. Case Temperature



Source-Drain Diode Forward Voltage

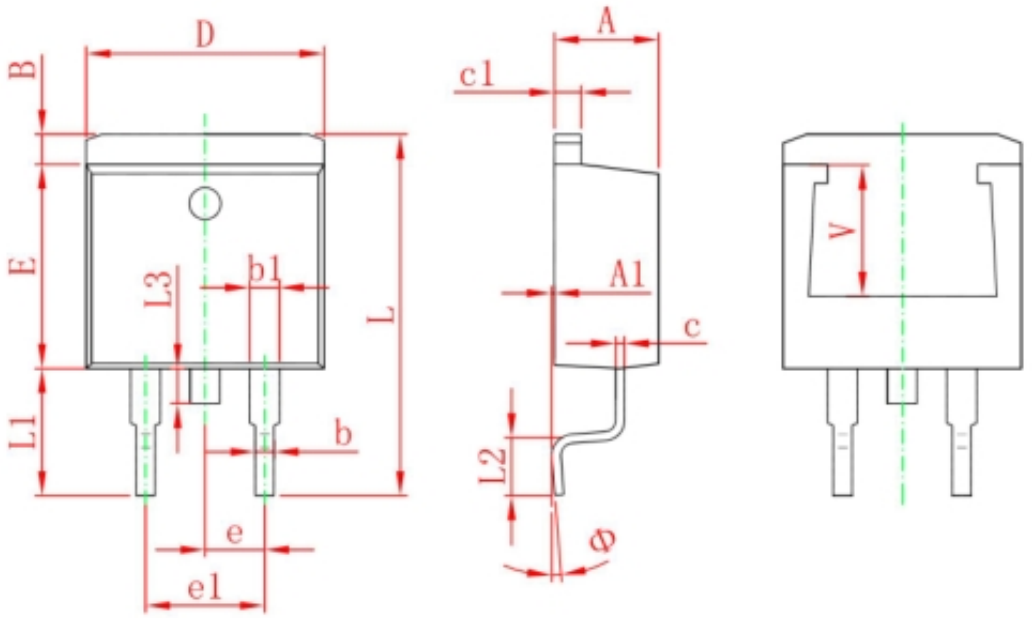


Safe Operating Area



Normalized Thermal Transient Impedance, Junction-to-Case

TO-263 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	