

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	5.5m Ω @10V	100A
	8.5m Ω @4.5V	

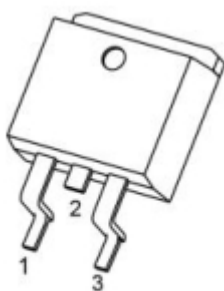
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Applications

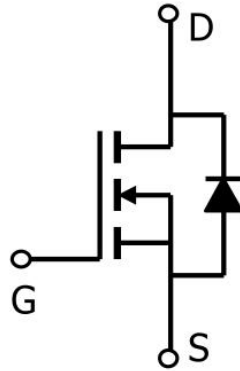
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

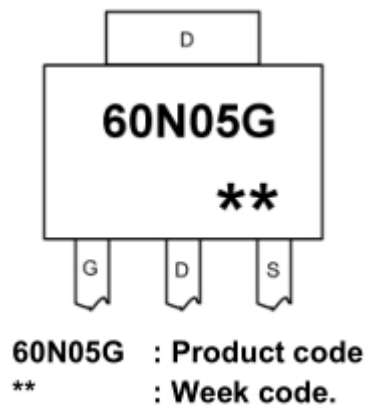


TO-263(G:1 D:2 S:3)

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current(T _c =25°C)	I _D	100	A
Pulse Drain Current Tested	I _{DM}	400	A
Single Pulse Avalanche Energy ¹	E _{AS}	289	mJ
Maximum Power Dissipation(T _c =25°C)	P _D	105	W
Thermal Resistance-Junction to Case	R _{θJC}	1.19	°C/ W
Maximum Junction Temperature	R _{θJA}	-55~ +150	°C
Storage Temperature Range	T _{STG} , T _J	-55~ +150	°C

Electrical characteristics

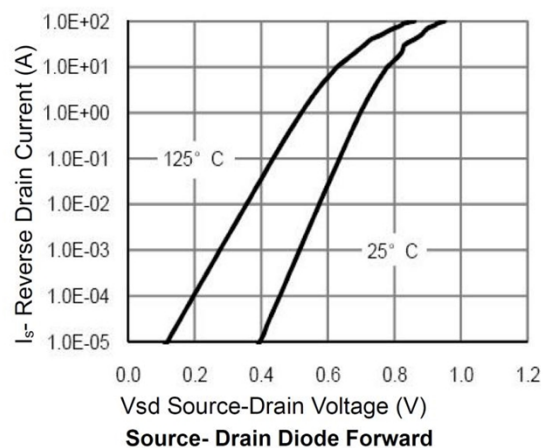
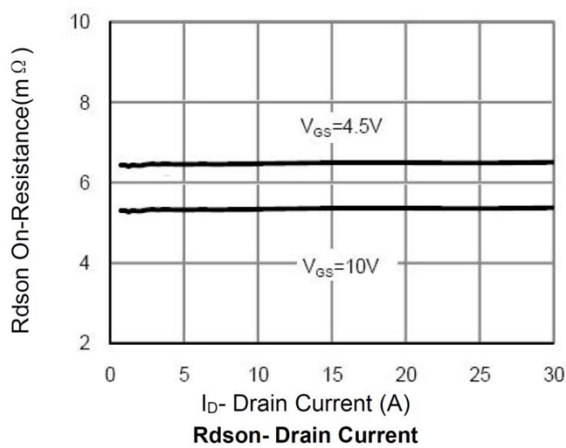
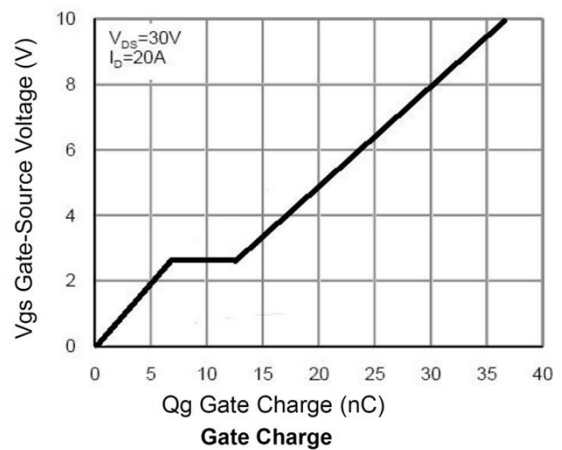
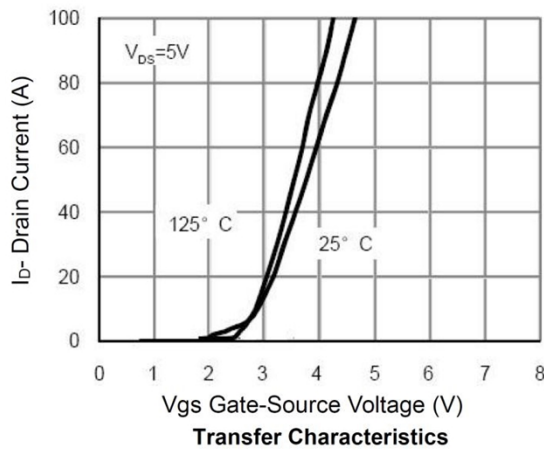
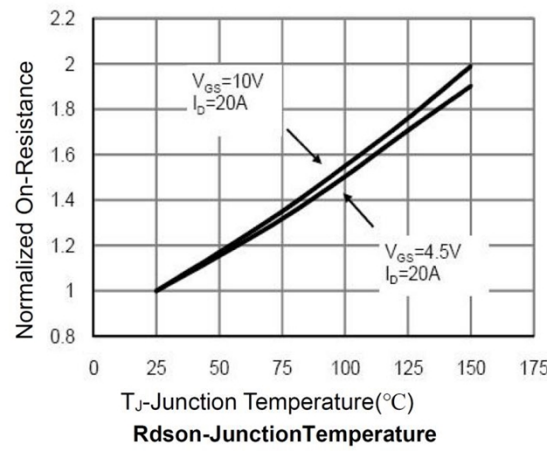
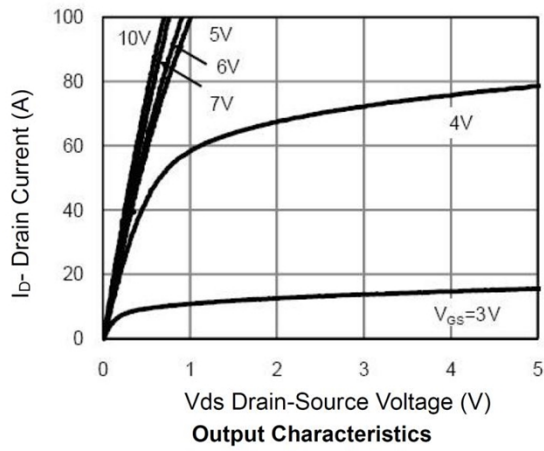
(T_A=25°C, unless otherwise noted)

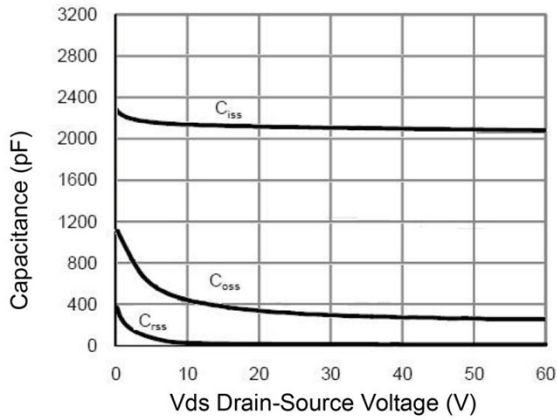
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V,V _{GS} = 0V			1	uA
Gate-source leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	2.0	3.0	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		5.5	6.9	mΩ
		V _{GS} =4.5V, I _D =10A		8.5	11.5	
Dynamic Characteristics Reverse						
Input Capacitance	C _{iSS}	V _{GS} =0V, V _{DS} =30V, f=1MHz		2083		pF
Output Capacitance	C _{oSS}			793		
Transfer Capacitance	C _{rSS}			16		
Total gate charge	Q _g	V _{DS} =30V , V _{GS} =10V , I _D =20A		37.5		pF
Gate-source charge	Q _{gs}			6.5		
Gate-drain charge	Q _{gd}			10		
Turn-On Delay Time	T _{d(on)}	V _{DD} =30V, I _D =20A, V _{GS} =10V, R _G =4.7Ω		9		nS
Rise Time	T _r			3.5		
Turn-Off Delay Time	T _{d(off)}			32		
Source-Drain Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V ,I _S =1A			1.2	V

Note :

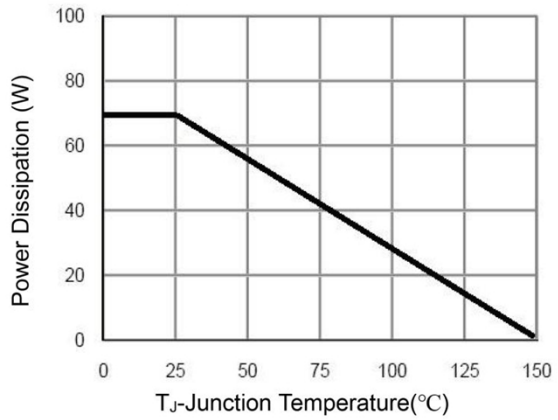
1. The E_{AS} data shows Max. rating . The test condition is V_{DD}=30V, V_{GS}=10V, L=0.5mH, R_G=25Ω

Typical Characteristics

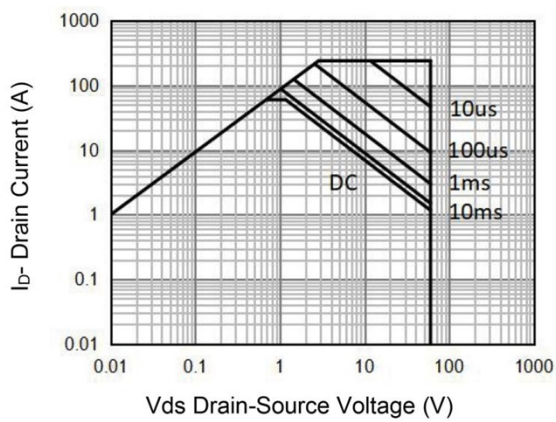




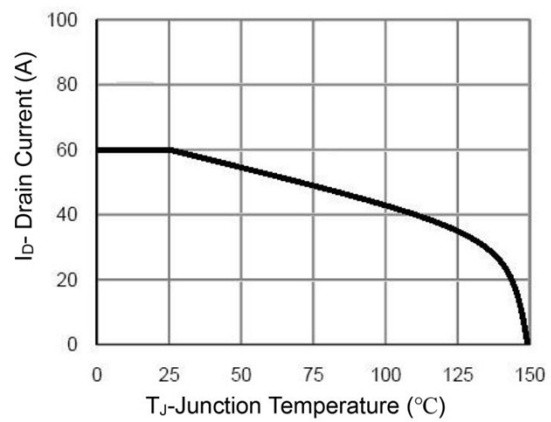
Capacitance vs Vds



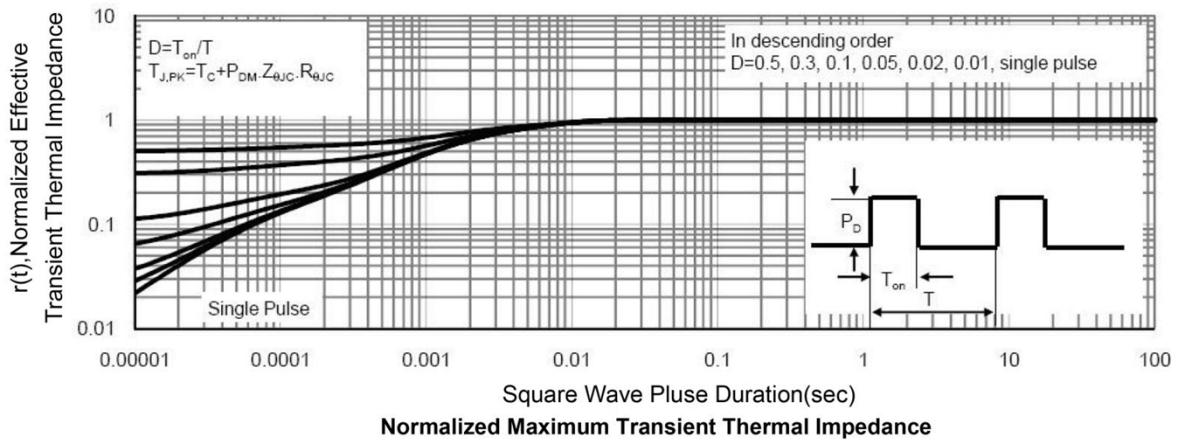
Power De-rating



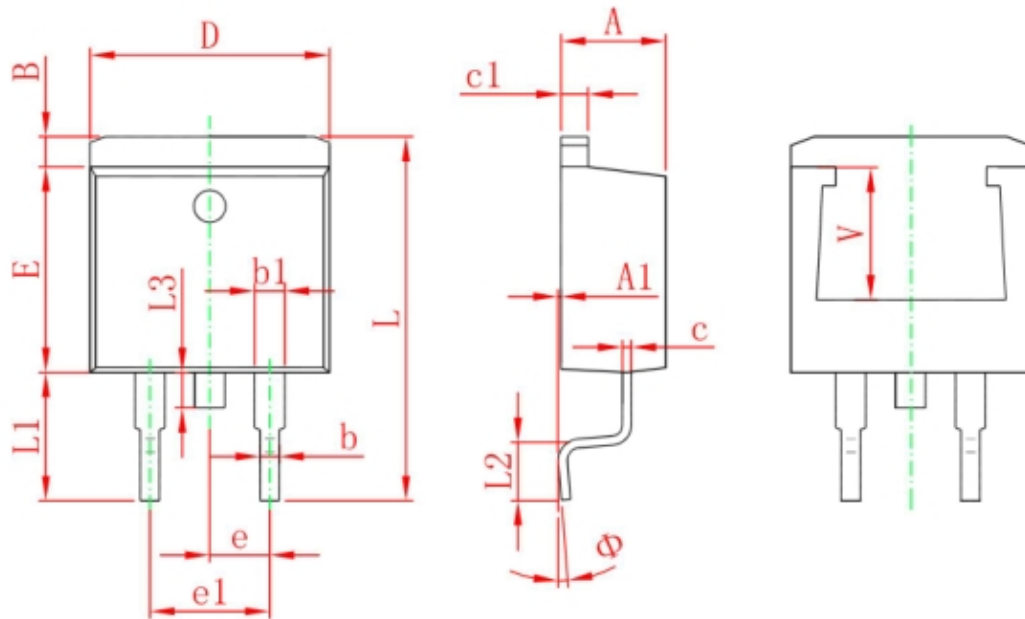
Safe Operation Area



Current De-rating



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.	