

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	5mΩ@10V	90A
	8mΩ@4.5V	

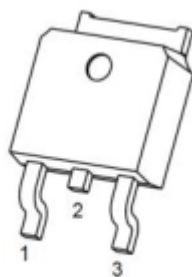
Feature

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

Applications

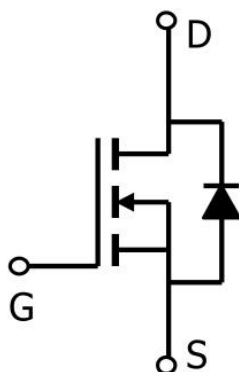
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

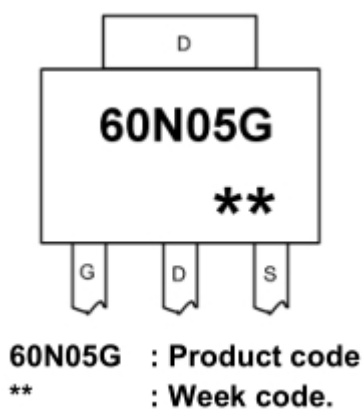


TO-252-2L(G:1 D:2 S:3)

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	90	A
Pulse Drain Current Tested	I _{DM}	360	A
Single Pulse Avalanche Energy ¹	E _{AS}	289	mJ
Maximum Power Dissipation(T _c =25°C)	P _D	90	W
Thermal Resistance-Junction to Case	R _{θJC}	1.38	°C/ W
Maximum Junction Temperature	T _J	-55~ +150	°C
Storage Temperature Range	T _{STG}	-55~ +150	°C

Electrical characteristics

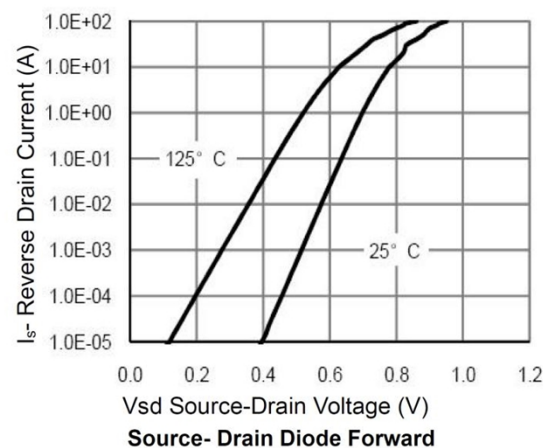
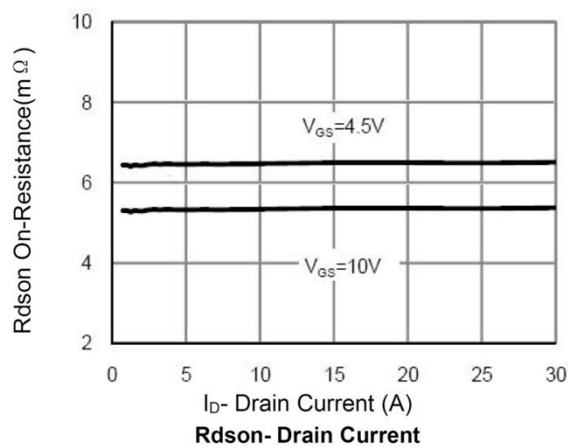
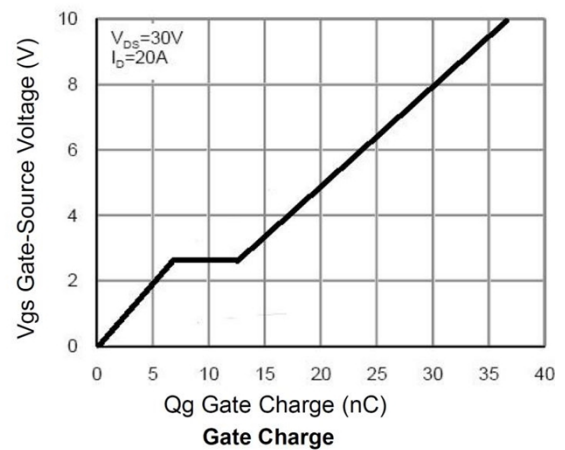
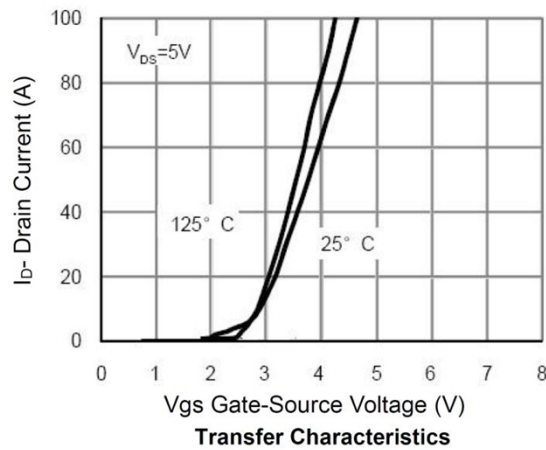
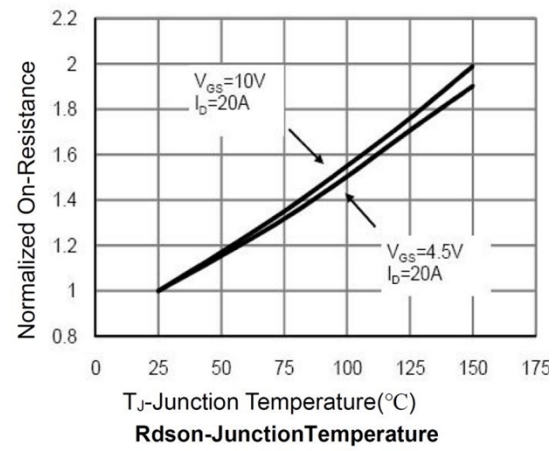
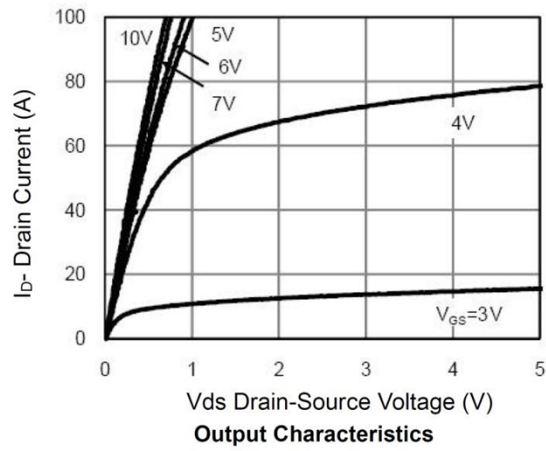
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

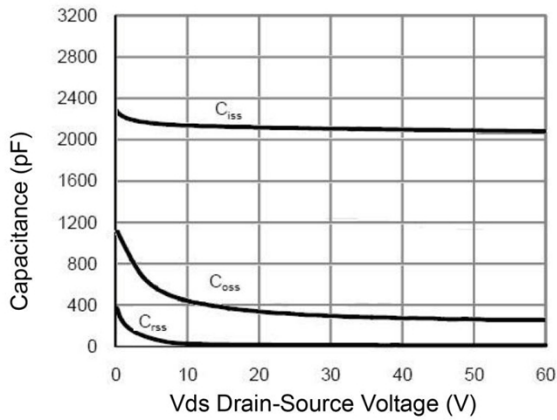
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V,V _{GS} = 0V			1	uA
Gate-source leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	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	7.3	mΩ
		V _{GS} =4.5V, I _D =10A		8.5	11.8	
Dynamic Characteristics Reverse						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =30V, f=1MHz		2083		pF
Output Capacitance	C _{oss}			793		
Reverse 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 :

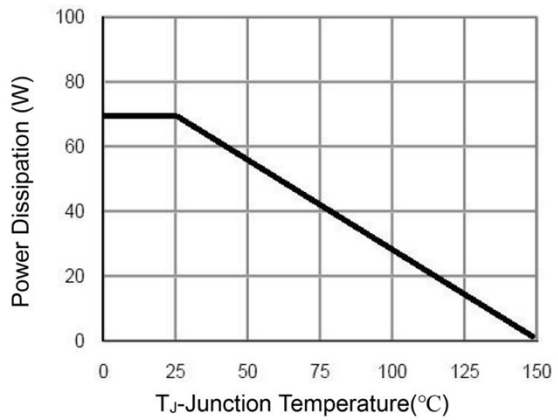
1. The E_{AS} data shows Max. rating . The test condition is $V_{DD}=30V, V_{GS}=10V, L=0.5\text{mH}, R_G=25\Omega$

Typical Characteristics

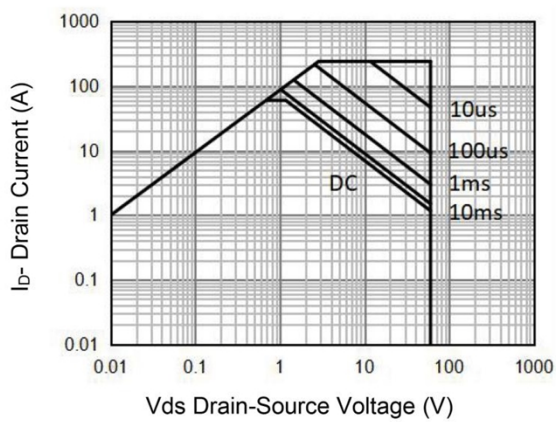




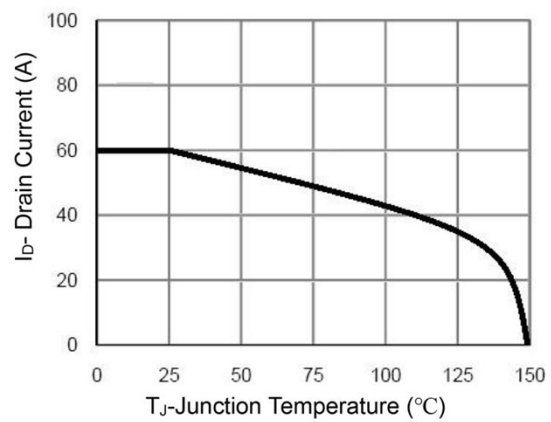
Capacitance vs Vds



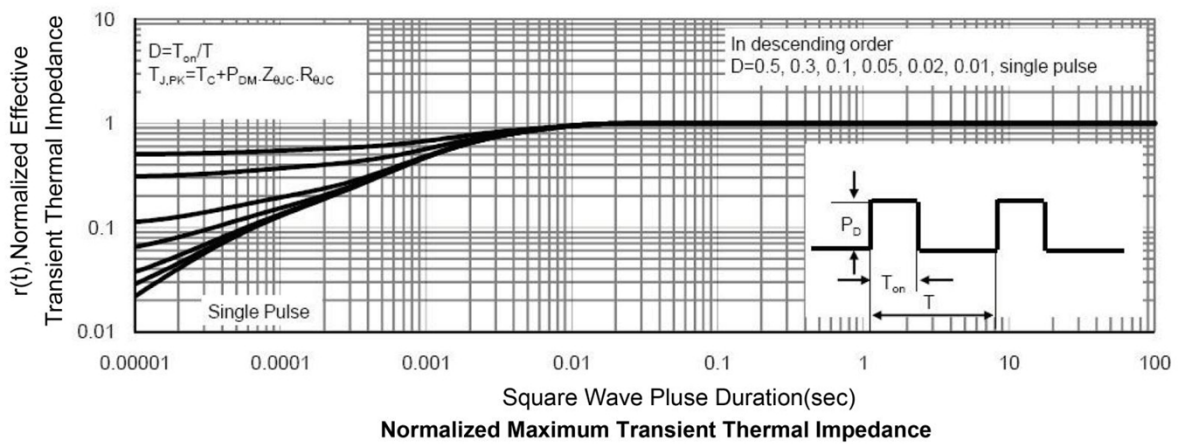
Power De-rating



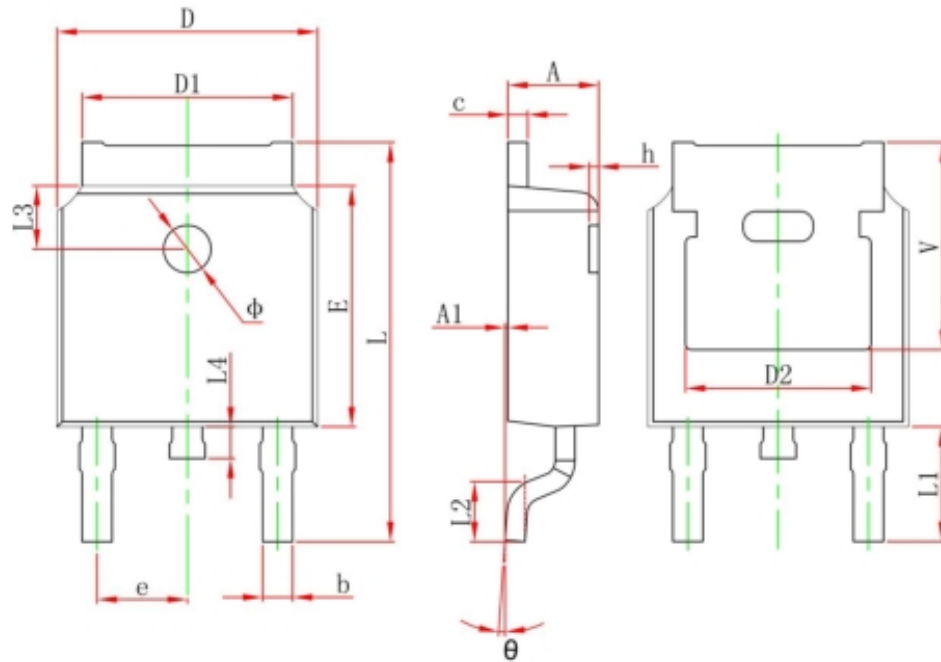
Safe Operation Area



Current De-rating



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.	