

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	35mΩ@10V	25A
	40mΩ@4.5V	

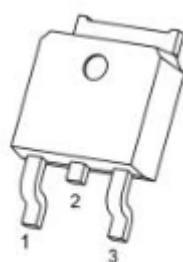
Feature

- $V_{DS} = 100V$, $I_D = 25A$
 $R_{DS(on)} < 50m\Omega @ V_{GS} = 10V$ $R_{DS(on)} < 55m\Omega @ V_{GS} = 4.5V$
- Low Gate Charge
- Advanced High Cell Density Trench Technology
- 100% Single Pulse avalanche energy Test

Application

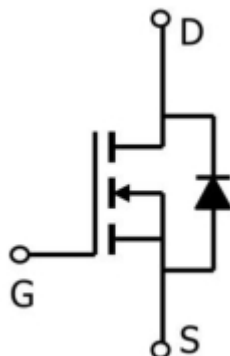
- Power Management Switches
- DC/DC Converter

Package



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

Circuit diagram



Marking



Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_c=25^{\circ}\text{C}$)	I_D	25	A
Pulsed Drain Current	I_{DM}	100	A
Single Pulse Avalanche Energy ¹	E_{AS}	100	mJ
Total Power Dissipation ($T_c=25^{\circ}\text{C}$)	P_D	70	W
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	1.78	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

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

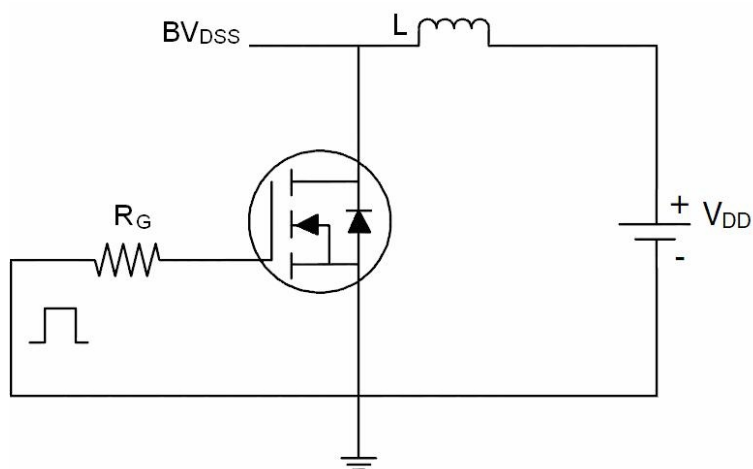
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 80V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	2.5	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$		35	50	m Ω
		$V_{GS} = 4.5V, I_D = 6A$		40	55	
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V,$ $f = 1MHz$		3000		pF
Output Capacitance	C_{oss}			96		
Reverse Transfer Capacitance	C_{rss}			55		
Switching Characteristics						
Turn-On Delay Time	$T_{d(on)}$	$V_{GS} = 10V, V_{DD} = 50V,$ $R_G = 3\Omega, I_D = 10A$		9		nS
Turn-on Rise Time	T_r			8		
Turn-Off Delay Time	$T_{d(off)}$			32		
Turn-Off Fall Time	T_f			9		
Total Gate Charge	Q_g	$V_{GS} = 10V, V_{DS} = 50V,$ $I_D = 25A$		70		nC
Gate-Source Charge	Q_{gS}			9		
Gate-Drain Charge	Q_{gd}			18		
Drain-Source Diode Characteristics						
Diode forward voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

Notes:

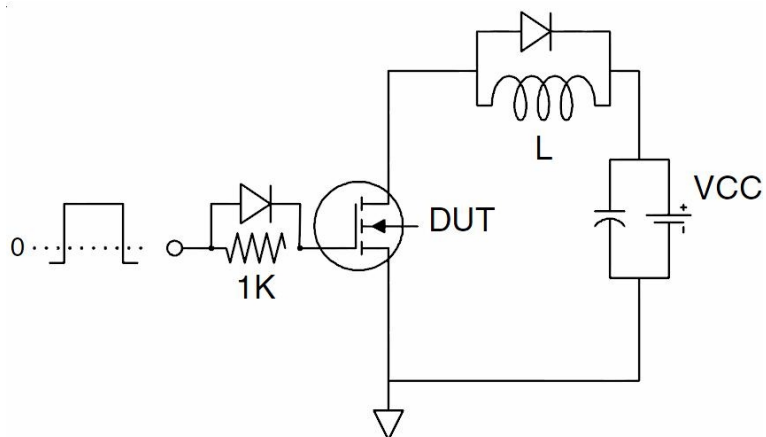
1. EAS condition: $V_{DD}=50V, V_{GS}=10V, L=0.5mH, R_G=25\Omega$

Test Circuit

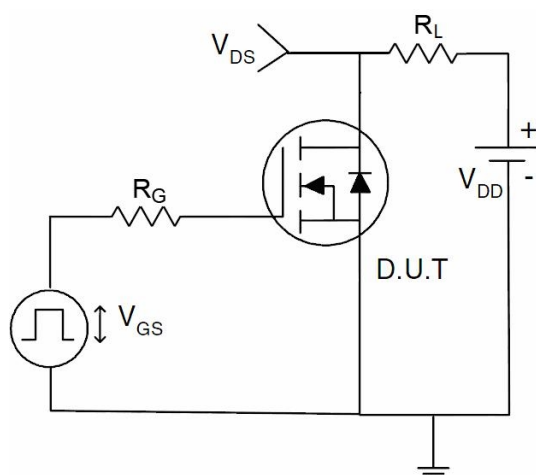
- EAS Test Circuits



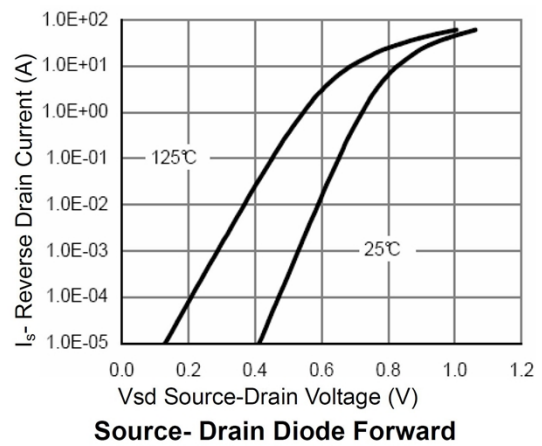
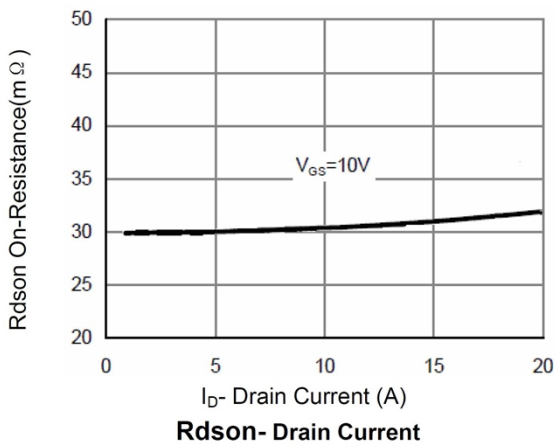
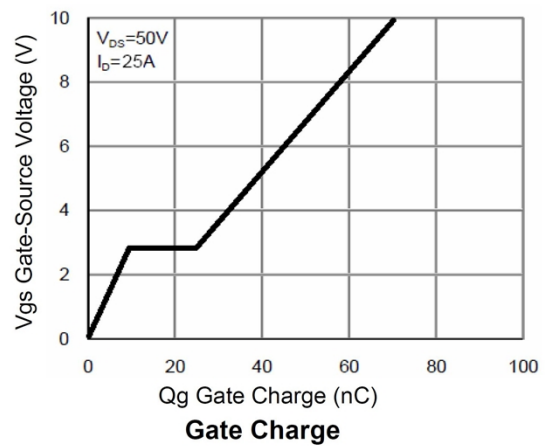
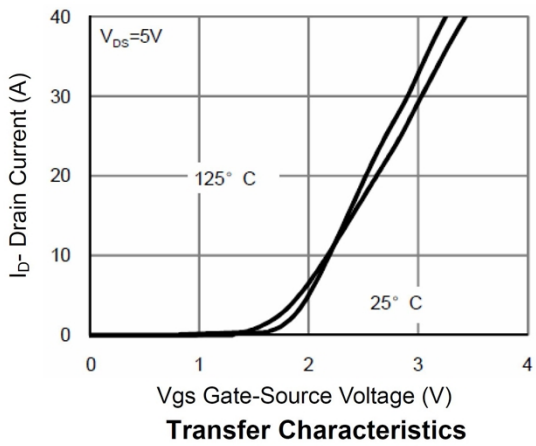
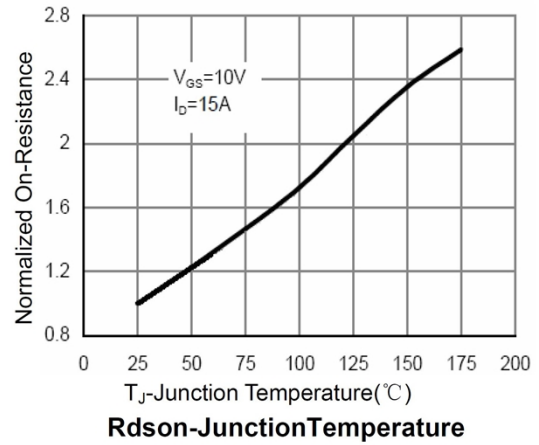
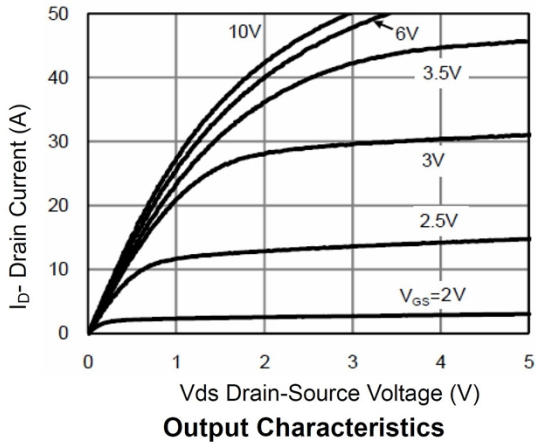
- Gate Charge Test Circuit

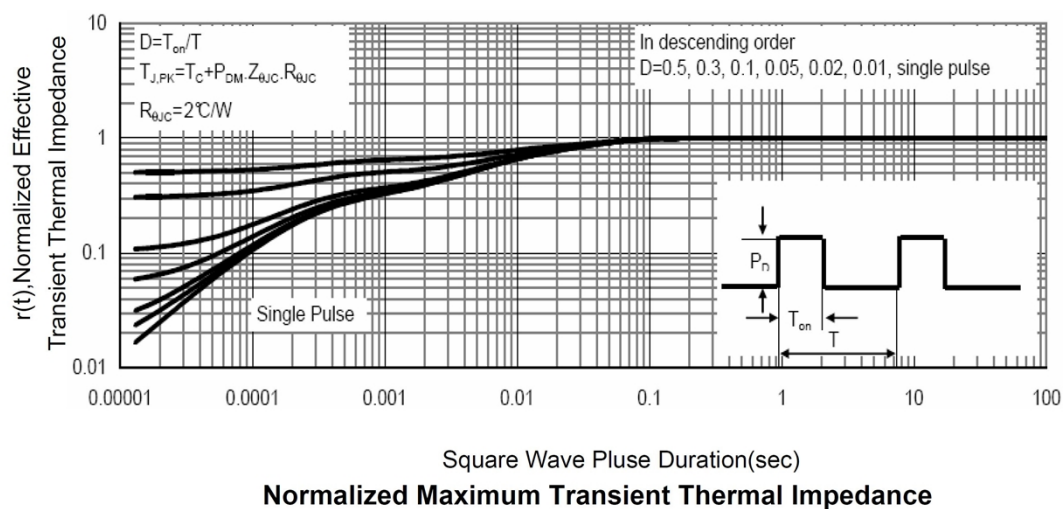
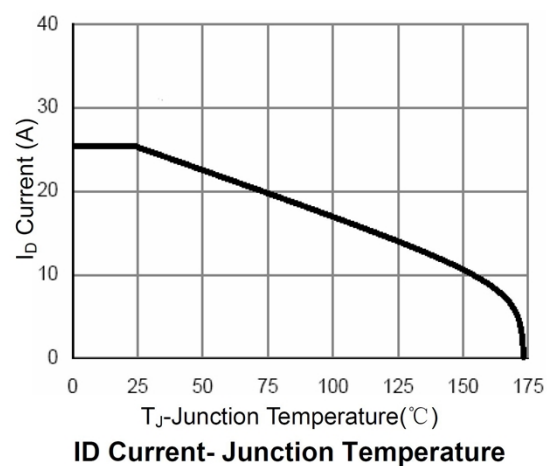
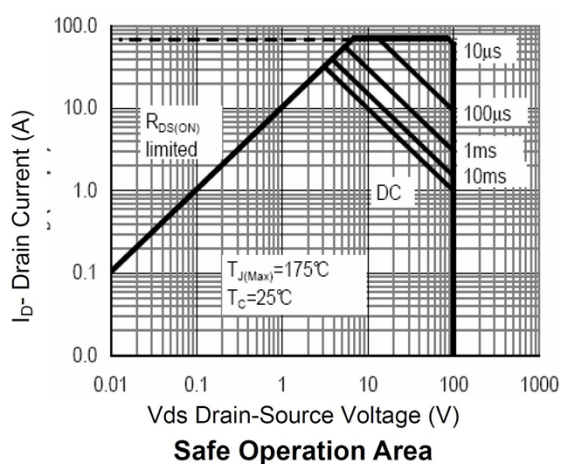
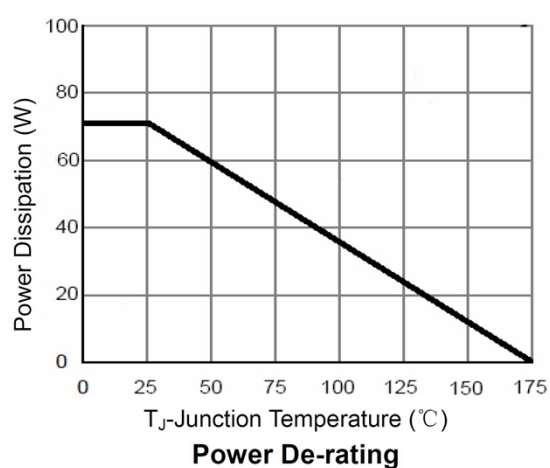
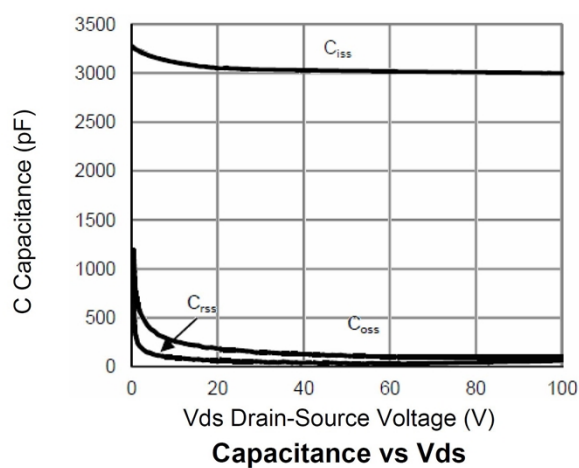


- Switch Time Test Circuit

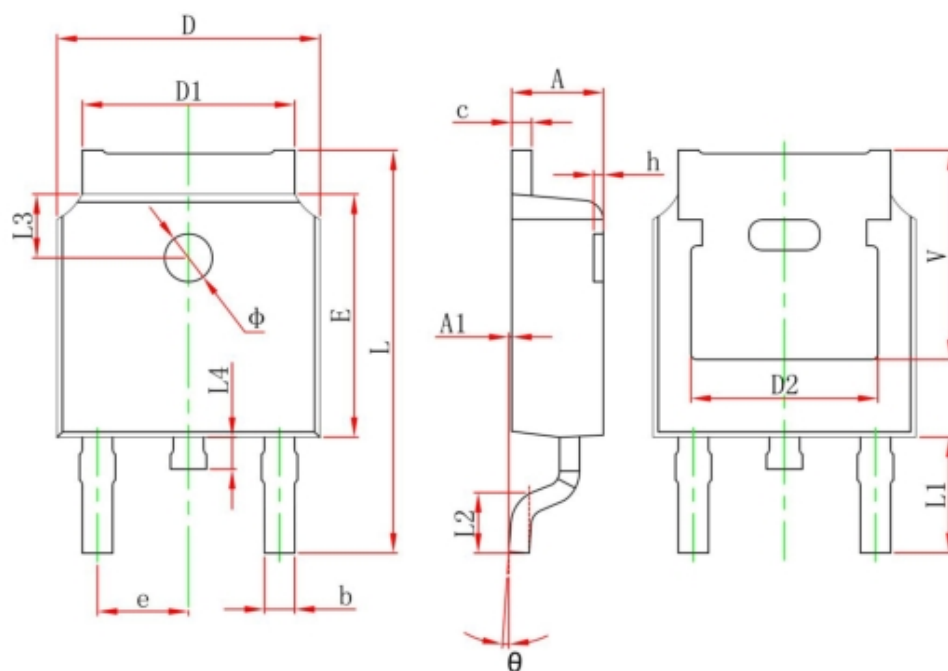


Typical Characteristics





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.	