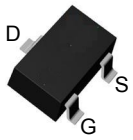
- 100V/3A
- $R_{DS(ON)}$=220mΩ (typ) @VGS=10V
  $R_{DS(ON)}$=280mΩ (typ) @VGS=4.5V
- 100% UIS & RG Tested
- Reliableand Rugged
- Lead Freeand Green Devices Available (RoHS Compliant)

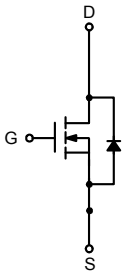
Applications

- Power Management for Industrial DC/DC Converters

Pin Description



Top View of SOT-23



N-Channel MOSFET

Absolute Maximum Ratings (T = 25°C unless otherwise noted)

Symbol	Parameter		Rating	Unit
Common Ratings				
V_{DSS}	Drain-Source Voltage		100	V
V_{GSS}	Gate-Source Voltage		±20	
I_D	Continuous Drain Current	T_J=150°C	3	A
I_{DM}	Pulsed Drain Current	Tc=25°C	10	
I_S	Diode Continuous Forward Current	Tc=25°C	1	A
T_{STG}, T_j	Storage Temperature Range		-55 to 150	°C
PD	Power Dissipation	T_A=25°C	1.25	W
		T_A=70°C	0.8	
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		62.5	°C/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress rating only and functional device operation is not implied

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=250μA	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =80V, V_{GS}=0V	-	-	1	μA
		T_J=85°C	-	-	5	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} =V_{GS}, I_{DS}=250μA	1	-	2.5	V
I_{GSS}	Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
$R_{DS(ON)}$	Drain-Source On-state Resistance	V_{GS}=10V, I_{DS}=3A	-	220	350	mΩ
		V_{GS}=4.5V, I_{DS}=2.5A	-	280	400	
G_{fs}	Forward Transconductance	V_{DS}=5V,I_D=1A	-	10	-	S
Body Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_{SD}=1A, V_{GS}=0V	-	0.8	1.0	V
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS} =50V, Frequency=1.0MHz	-	295	-	pF
C_{oss}	Output Capacitance		-	40	-	
C_{rss}	Reverse transfer capacitance		-	15	-	
$t_{d(ON)}$	Turn-on delay Time	V_{GS}=4.5V ,V_{DS}=50V R_G=6Ω, I_D=1A,R_L=10Ω,	-	3.6	-	nS
t_r	Turn-on rise Time		-	3.5	-	
$t_{d(OFF)}$	Turn-off delay Time		-	32	-	
t_f	Turn-off rise Time		-	3	-	
Gate Charge Characteristics						
Q_g	Total Gate Charge	V_{DS}=50V, V_{GS}=4.5V, I_{DS}=1A	-	2.1	-	nC
Q_{gs}	Gate-Source Charge		-	0.6	-	
Q_{gd}	Gate-Drain Charge		-	0.8	-	

Note: 1. Pulse test: pulse width<=300uS, duty cycle<=2%

2.Static parameters are based on package level with recommended wire bonding

TYPICAL CHARACTERISTICS (25℃ Unless Note)

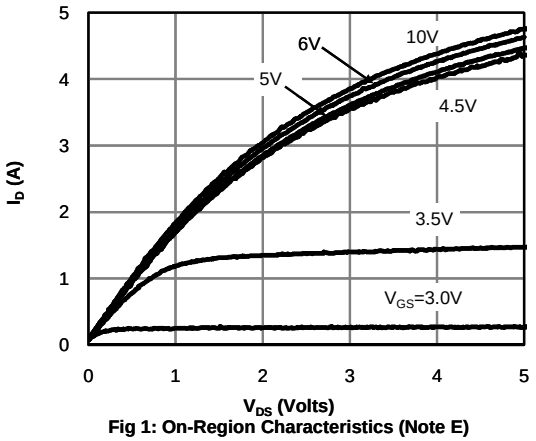


Fig 1: On-Region Characteristics (Note E)

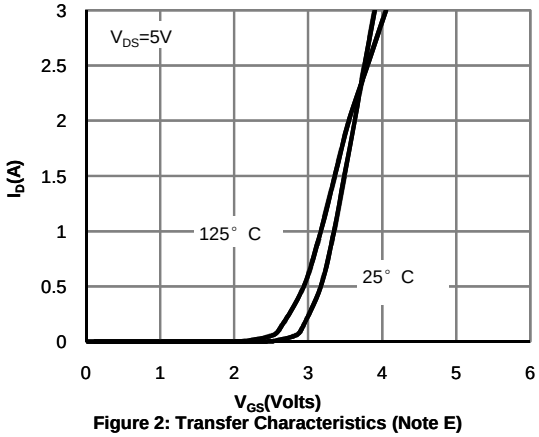


Figure 2: Transfer Characteristics (Note E)

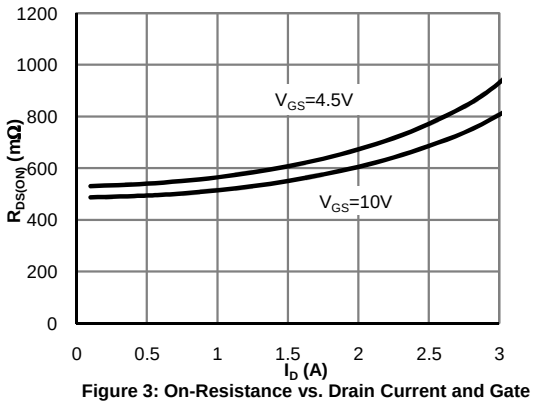


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

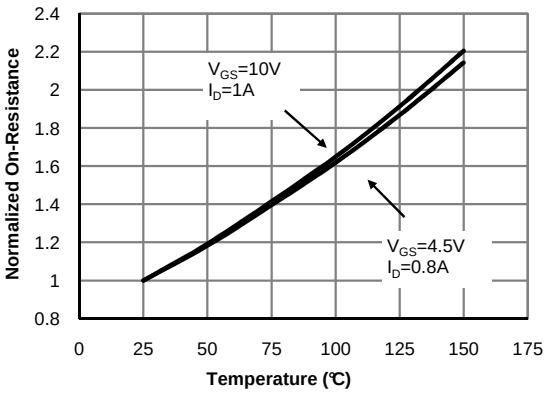


Figure 4: On-Resistance vs. Junction Temperature (Note E)

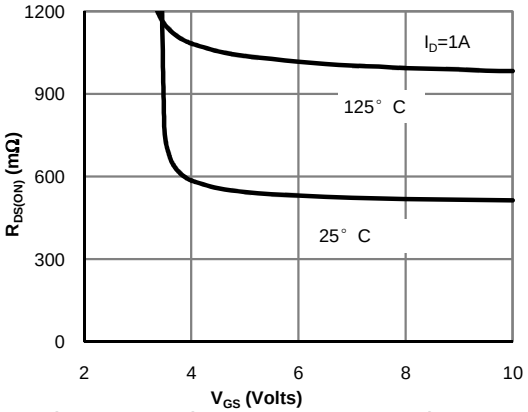


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

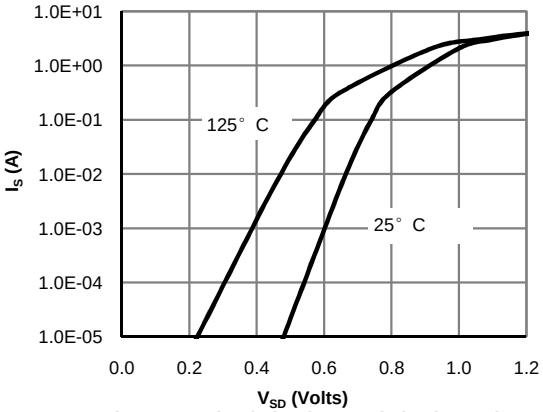


Figure 6: Body-Diode Characteristics (Note E)

TYPICAL CHARACTERISTICS (contin

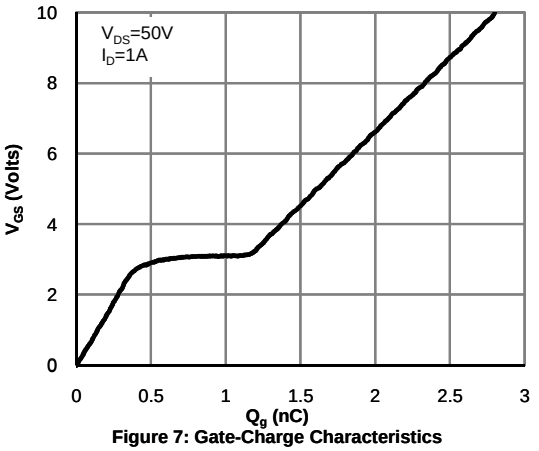


Figure 7: Gate-Charge Characteristics

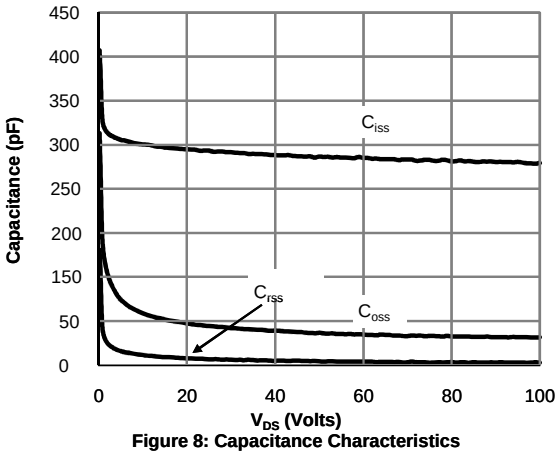


Figure 8: Capacitance Characteristics

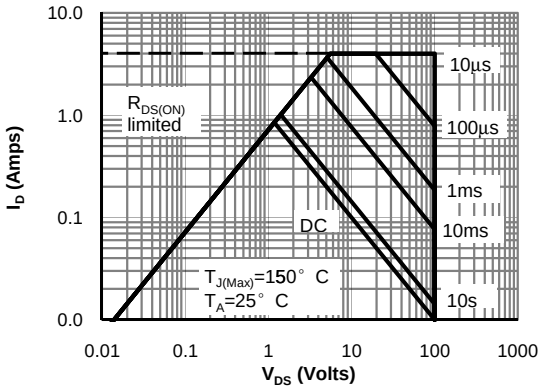


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

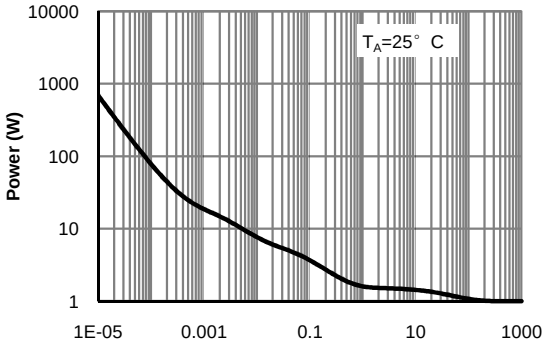


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

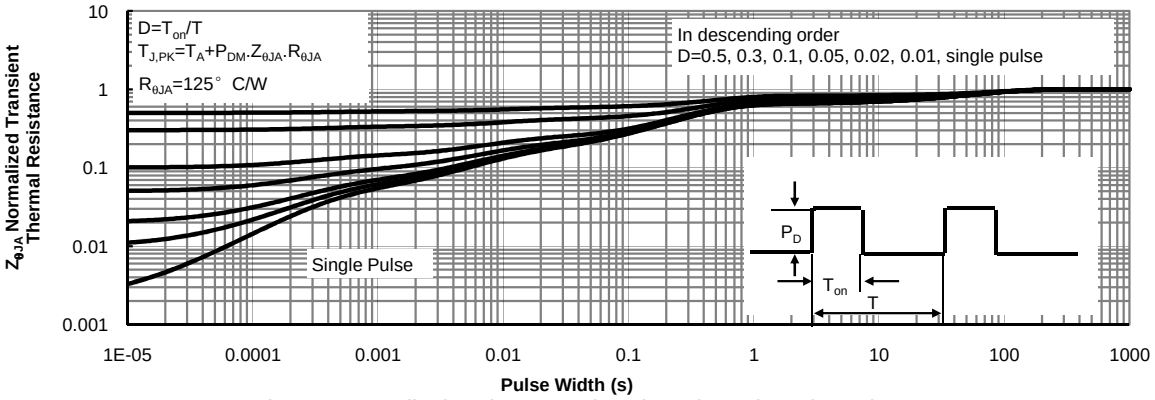
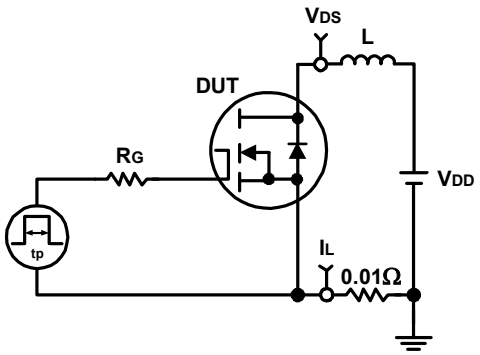
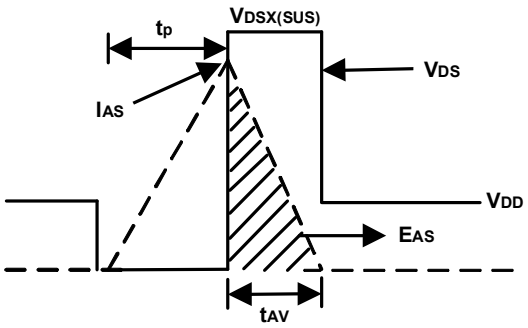


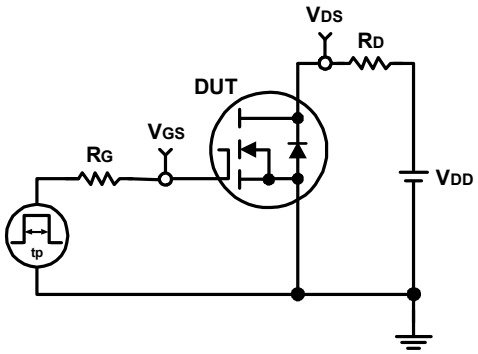
Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

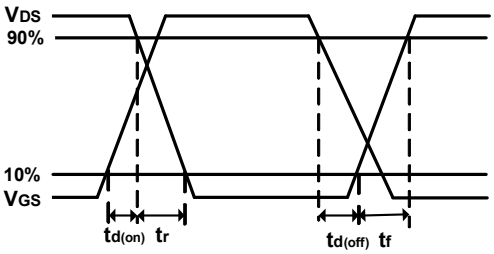
Avalanche Test Circuit and Waveforms





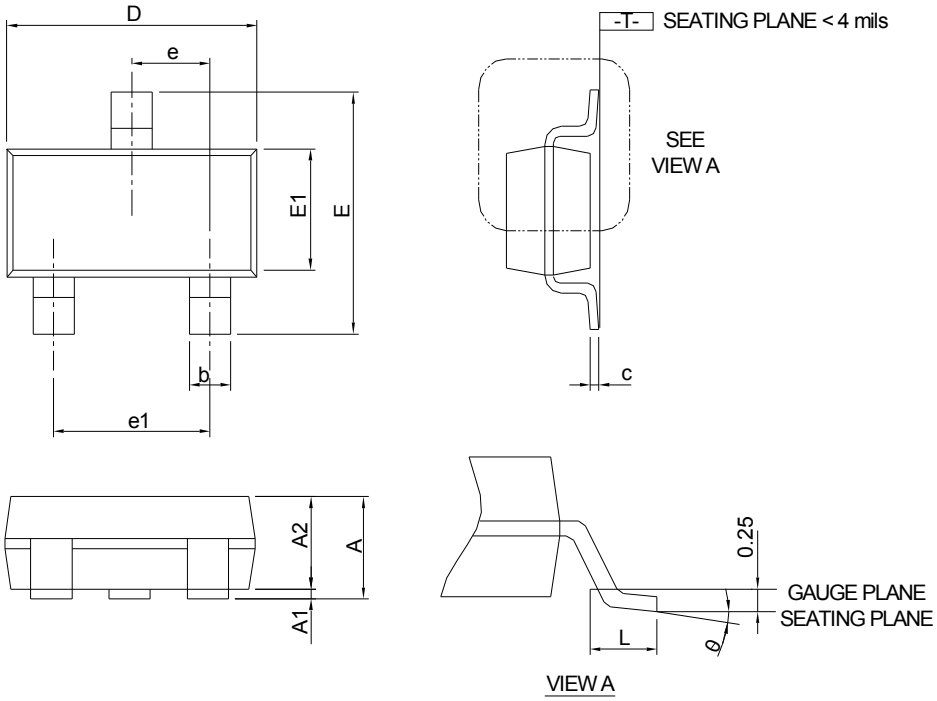
Switching Time Test Circuit and Waveforms





Package Information

SOT-23



SYMBOL	SOT-23-3			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.20	-	0.047
A1	0.00	0.08	0.000	0.003
A2	0.90	1.12	0.035	0.044
b	0.30	0.50	0.012	0.020
c	0.08	0.22	0.003	0.009
D	2.70	3.10	0.106	0.122
E	2.25	2.55	0.102	0.118
E1	1.20	1.40	0.055	0.071
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

Note : Dimension D and E1 do not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 10 mil per side.

RECOMMENDED LAND PATTERN