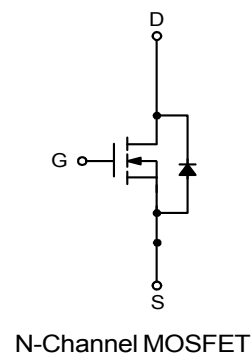
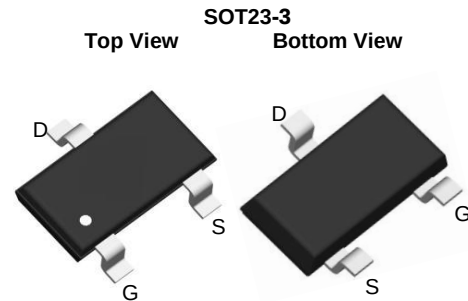


- 30V/4A
- $R_{DS(ON)}=40m\Omega$ (typ) @VGS=10V
 $R_{DS(ON)}=45m\Omega$ (typ) @VGS=4.5V
 $R_{DS(ON)}=60m\Omega$ (typ) @VGS=2.5V
- 100% UIS & RG Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

Applications

- Power Management for Industrial DC/DC Converters



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

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		30	V
V _{GSS}	Gate-Source Voltage		±12	
I _D	Continuous Drain Current(T _J =150°C)	V _{GS} =4.5V	4	A
I _{DM}	Pulsed Drain Current		15	
I _S	Diode Continuous Forward Current		1.5	A
T _{STG} , T _j	Storage Temperature Range		-55 to 150	°C
PD	Power Dissipation	T _A =25°C	1.4	W
		T _A =70°C	0.9	
R _{θJA}	Thermal Resistance-Junction to Ambient		90	°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 ($T_A = 25^\circ\text{C}$ 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	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V	-	-	1	μA
		T _J =55°C	-	-	5	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	0.5	-	1.5	V
I _{GSS}	Gate Leakage Current	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)}	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =4A	-	40	50	mΩ
		V _{GS} =4.5V, I _{DS} =3A	-	45	65	
		V _{GS} =2.5V,I _{DS} =2A	-	60	85	
Body Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} =1A, V _{GS} =0V	-	0.7	1.0	V
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, Frequency=1.0MHz	-	260	-	pF
C _{oss}	Output Capacitance		-	38	-	
C _{rss}	Reverse transfer capacitance		-	22	-	
t _{d(ON)}	Turn-on delay Time	V _{GS} =10V ,V _{DS} =15V R _G =3Ω,R _L =3.75Ω,	-	4	-	nS
t _r	Turn-on rise Time		-	2	-	
t _{d(OFF)}	Turn-off delay Time		-	20	-	
t _f	Turn-off rise Time		-	3	-	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _{DS} =4A	-	10	19	nC
Q _{gs}	Gate-Source Charge		-	1.1	-	
Q _{gd}	Gate-Drain Charge		-	1.8	-	

Note: 1. Pulse test: pulse width $\leq$ 300uS, duty cycle $\leq$ 2%

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

TYPICAL CHARACTERISTICS (25 °C Unless Note)

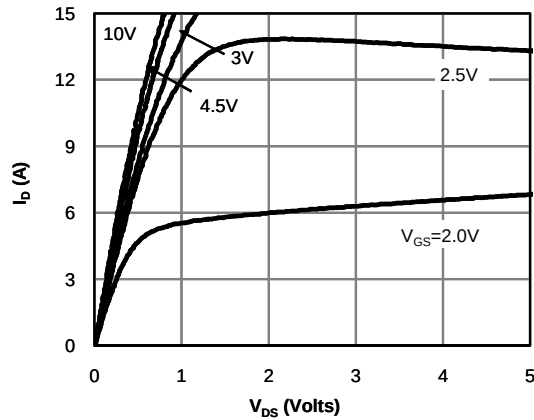


Fig 1: On-Region Characteristics (Note E)

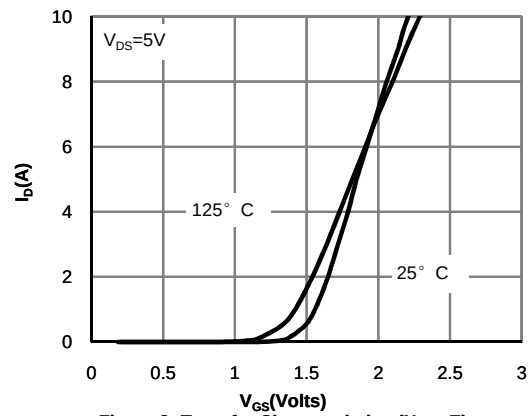


Figure 2: Transfer Characteristics (Note E)

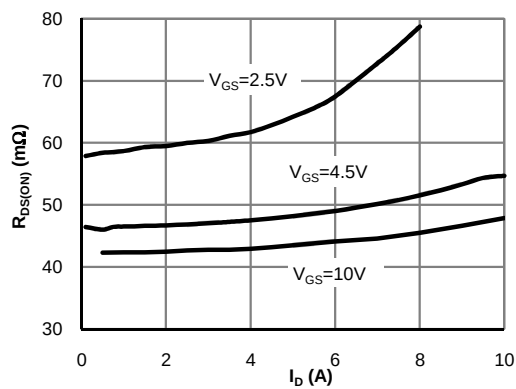


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

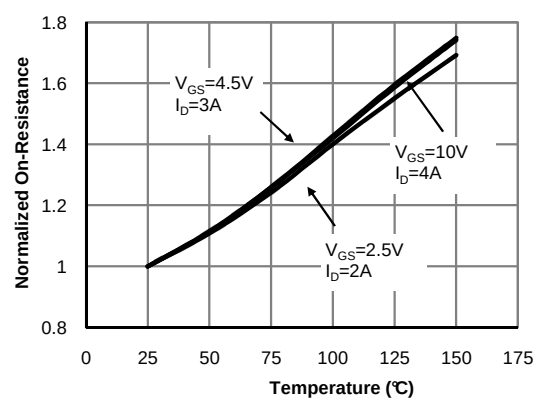


Figure 4: On-Resistance vs. Junction Temperature (Note E)

TYPICAL CHARACTERISTICS (continuous)

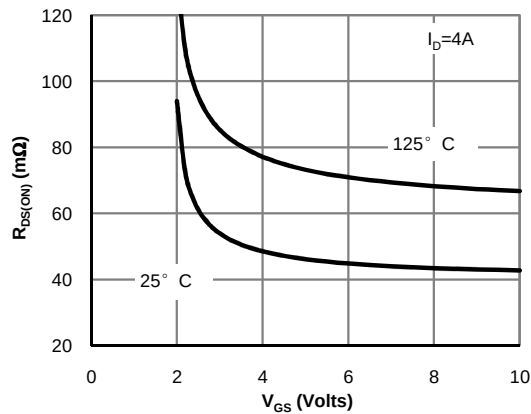


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

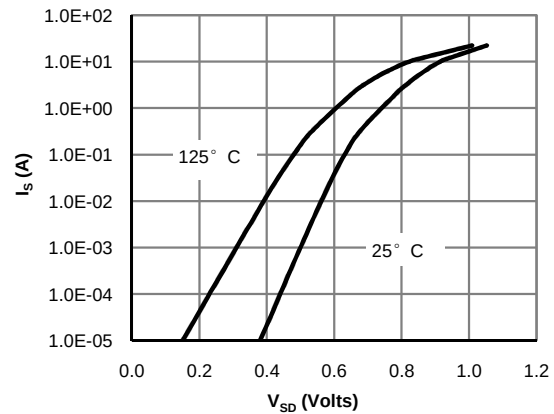


Figure 6: Body-Diode Characteristics (Note E)

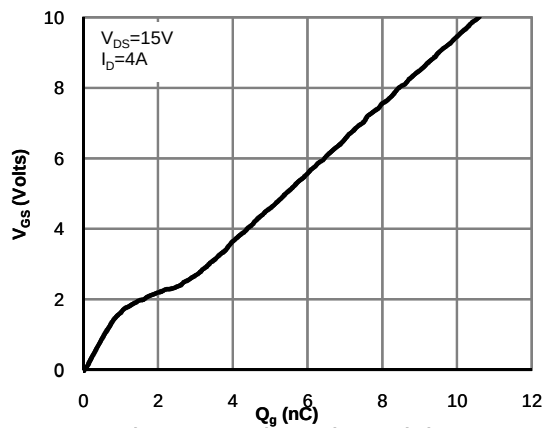


Figure 7: Gate-Charge Characteristics

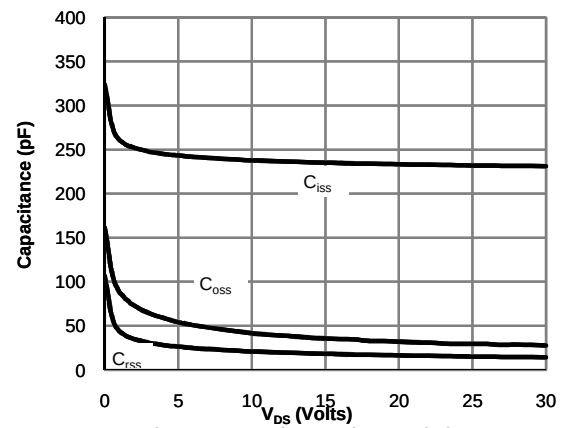


Figure 8: Capacitance Characteristics

TYPICAL CHARACTERISTICS (continuous)

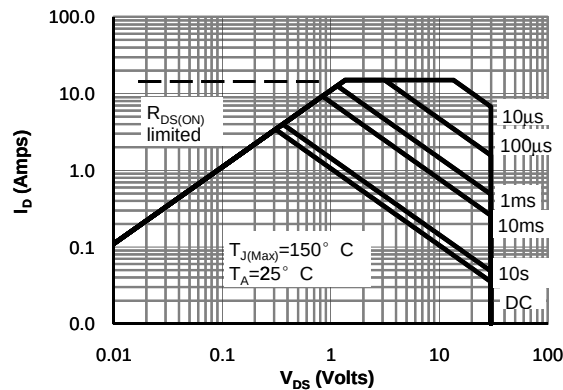


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

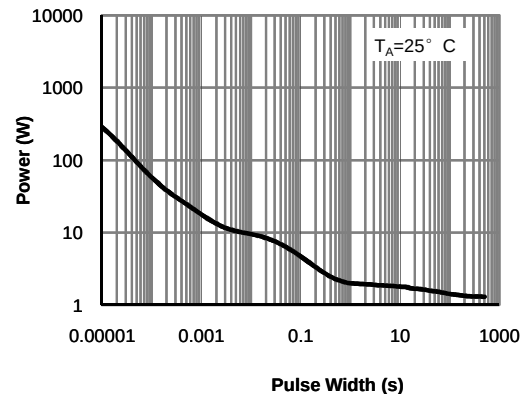


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

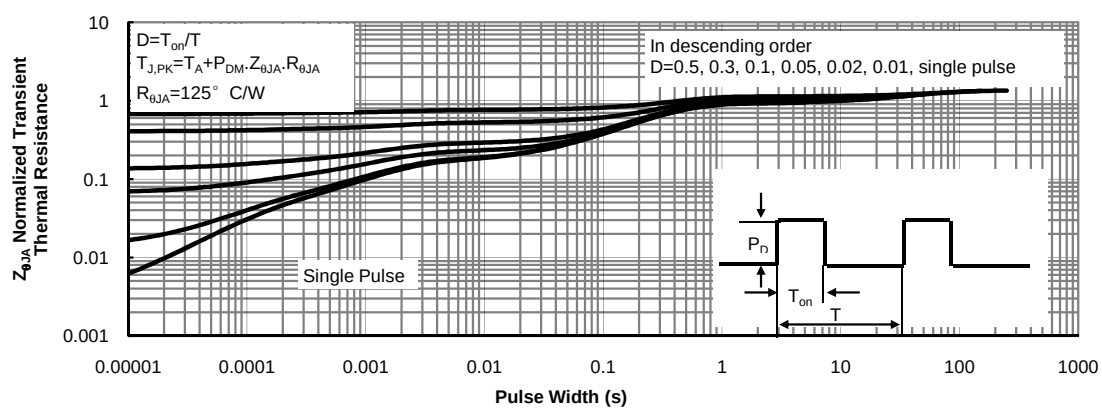
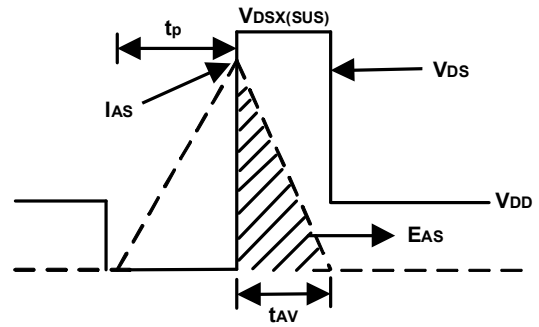
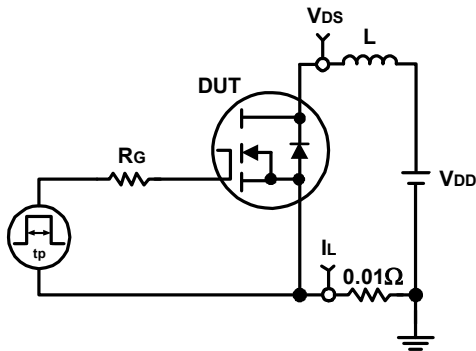
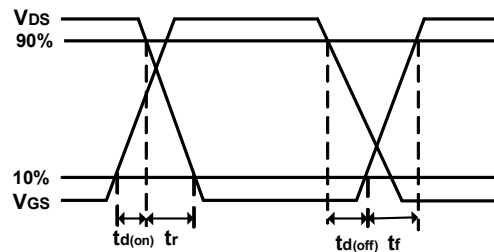
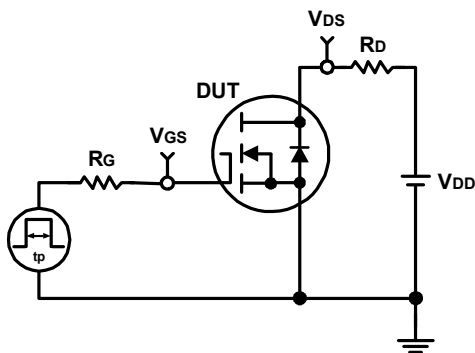


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

Avalanche Test Circuit and Waveforms

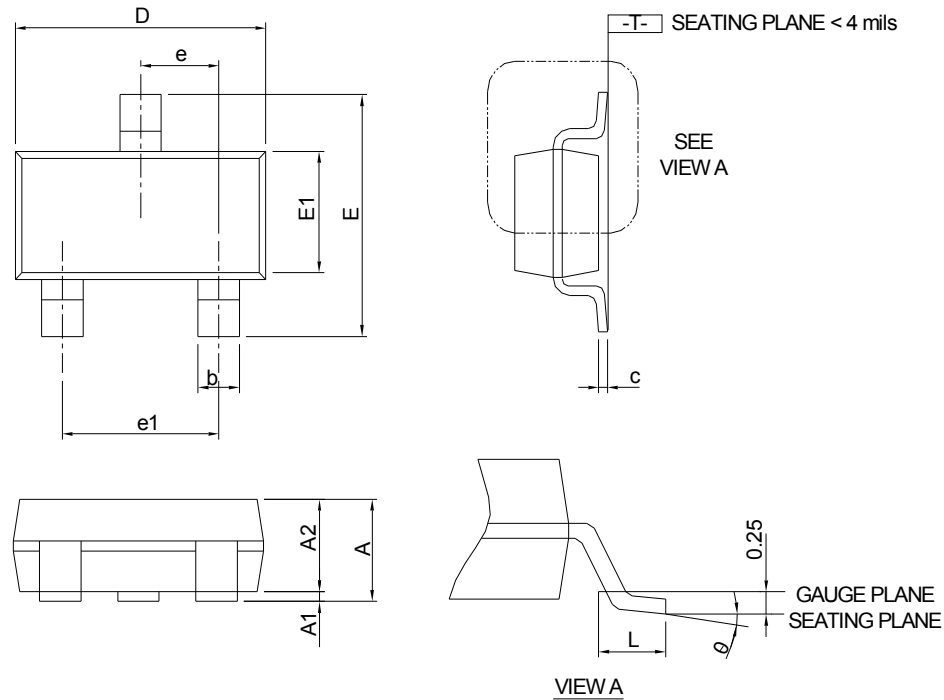


Switching Time Test Circuit and Waveforms



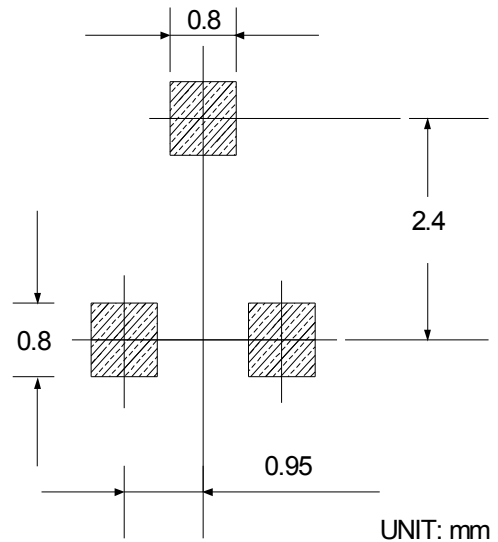
Package Information

SOT23-3L



SYMBOL	SOT 23-3L			
	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	2.60	3.00	0.102	0.118
E1	1.40	1.80	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°

RECOMMENDED LAND PATTERN



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.