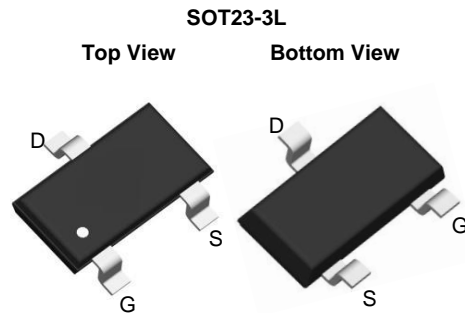


P-Channel Enhancement Mode MOSFET

Features

- -30V/-4.5A
- $R_{DS(ON)}=43m\Omega$ (typ) @VGS=10V
 $R_{DS(ON)}=50m\Omega$ (typ) @VGS=4.5V
- 100% UIS & RG Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

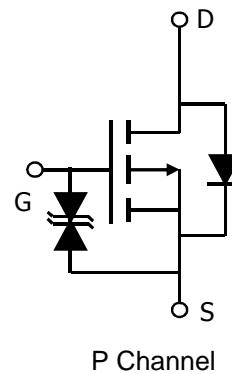


Applications

- Power Management for Industrial DC/DC Converters

Marking

Marking	X1****
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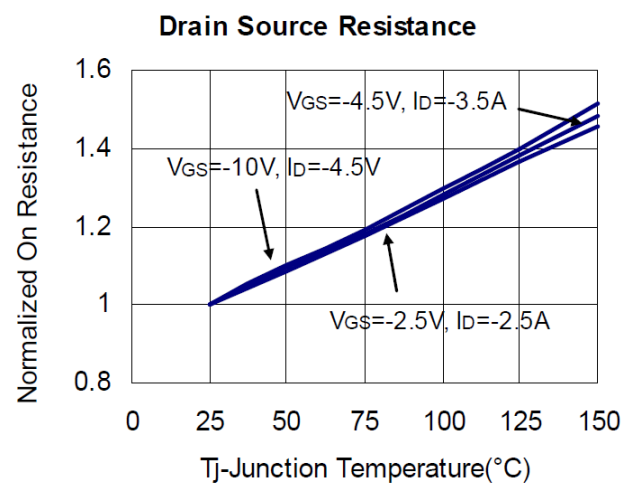
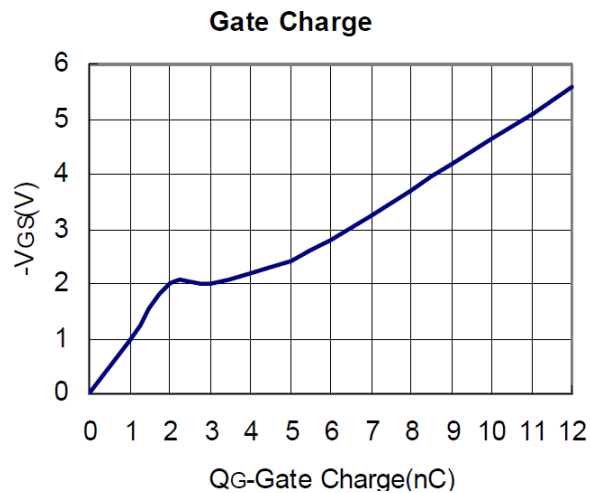
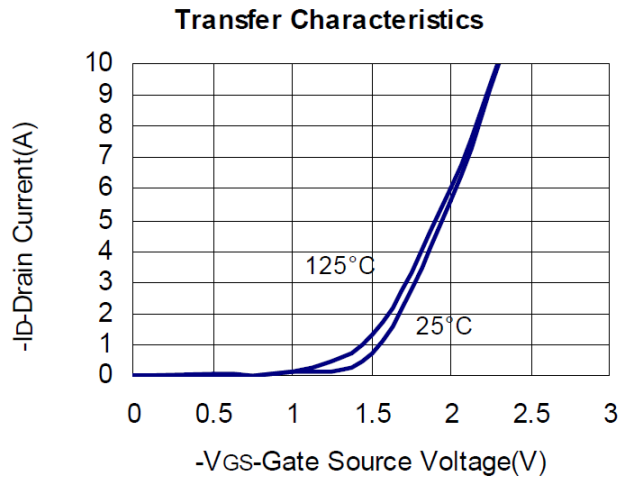
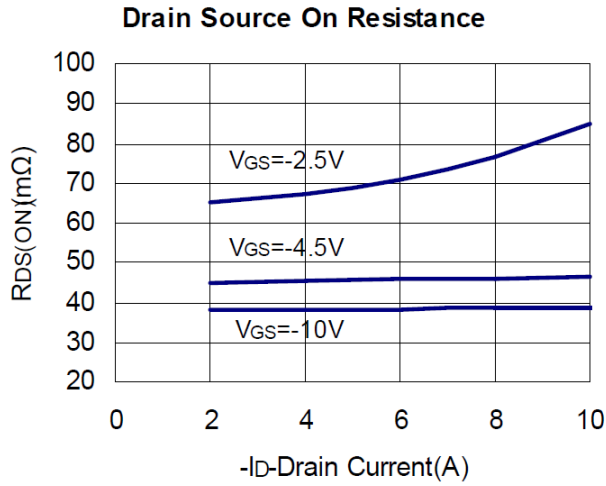
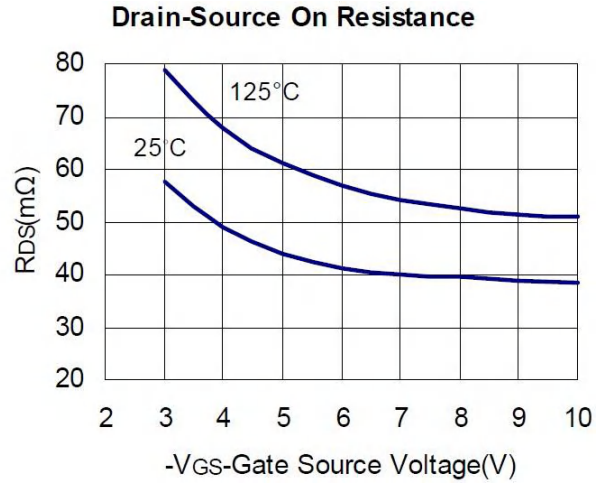
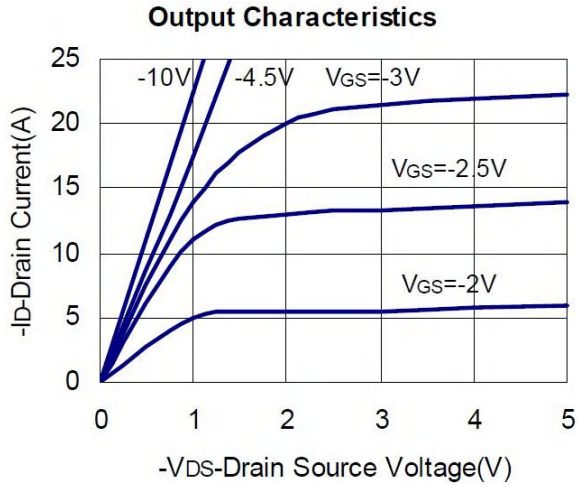
Absolute Maximum Ratings (T_A= 25°C unless otherwise noted)

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	A
I _{DM}	Pulsed Drain Current	-25	
I _S	Diode Continuous Forward Current	T _C =25°C	A
T _{STG} , T _J	Storage Temperature Range	-55 to 150	°C
PD	Power Dissipation	T _A =25°C	1.25
		T _A =70°C	0.8
R _{θJA}	Thermal Resistance-Junction to Ambient	120	

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

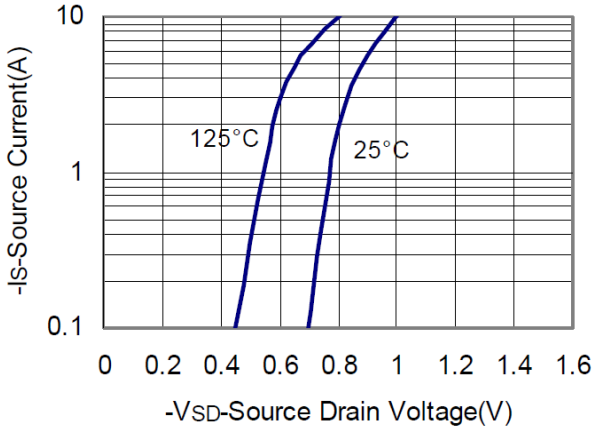
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} = 0V	-	-	-1	μA
		T _J = 55°C	-	-	-10	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _{DS} = -250μA	-0.6	-	-1	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} = -4.3A	-	43	50	mΩ
		V _{GS} = -4.5V, I _{DS} = -3.5A	-	50	68	
		V _{GS} = -2.5V, I _{DS} = -2.5A	-	66	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	-	645	-	pF
C _{oss}	Output Capacitance		-	272	-	
C _{rss}	Reverse transfer capacitance		-	52	-	
t _{d(ON)}	Turn-on delay Time	V _{GS} = -10V, V _{DS} = -15V R _G = 6Ω, I _D = -1A, R _L = 15Ω,	-	10	15	nS
t _r	Turn-on rise Time		-	2	5	
t _{d(OFF)}	Turn-off delay Time		-	31	40	
t _f	Turn-off rise Time		-	3	6	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} = -15V, V _{GS} = -10V, I _{DS} = -4A	-	6	-	nC
Q _{gs}	Gate-Source Charge		-	12	-	
Q _{gd}	Gate-Drain Charge		-	1.5	-	

TYPICAL CHARACTERISTICS (25°C Unless Note)

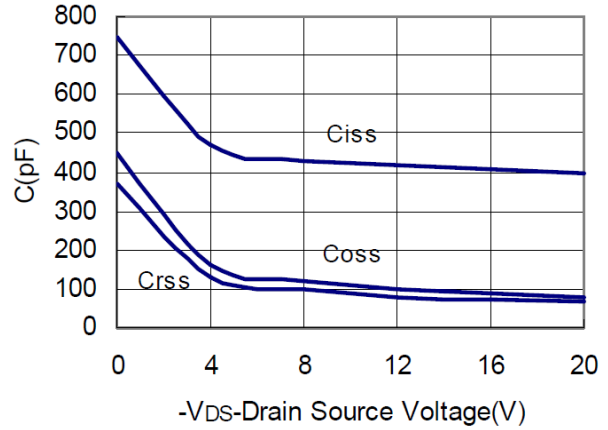


TYPICAL CHARACTERISTICS (continuous)

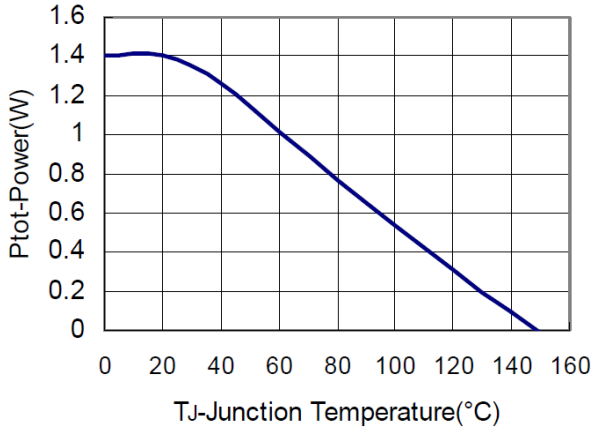
Source Drain Diode Forward



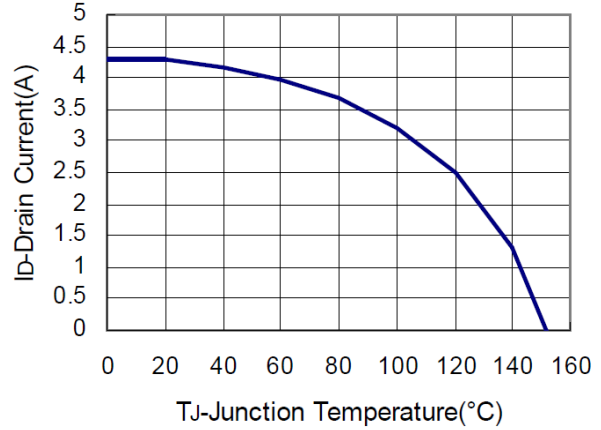
Capacitance



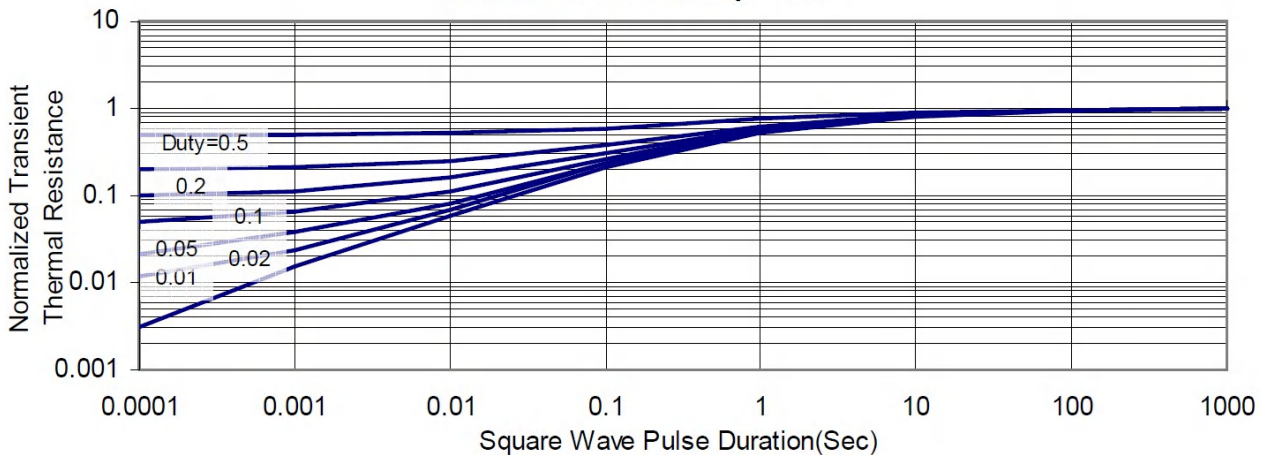
Power Dissipation



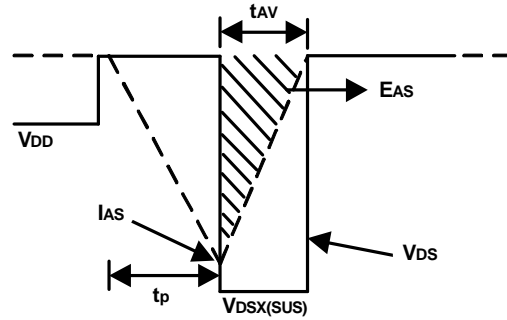
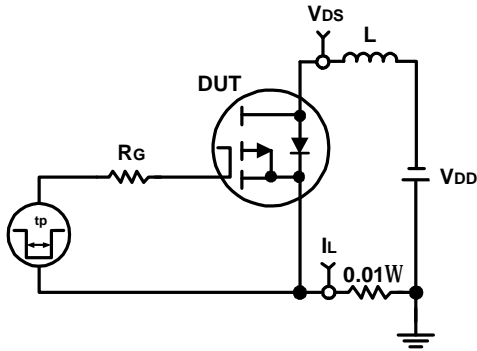
Drain Current



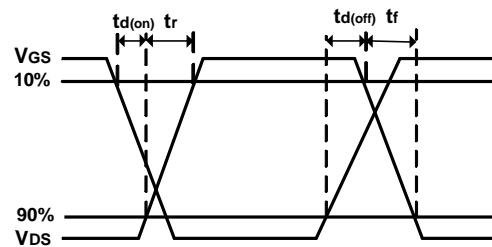
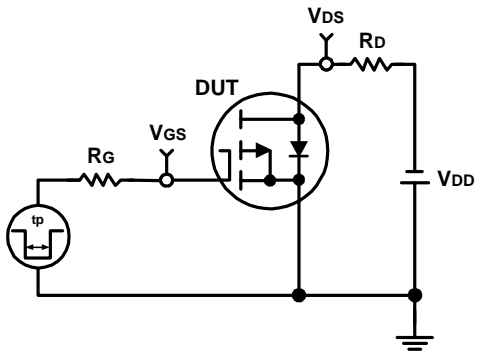
Thermal Transient Impedance



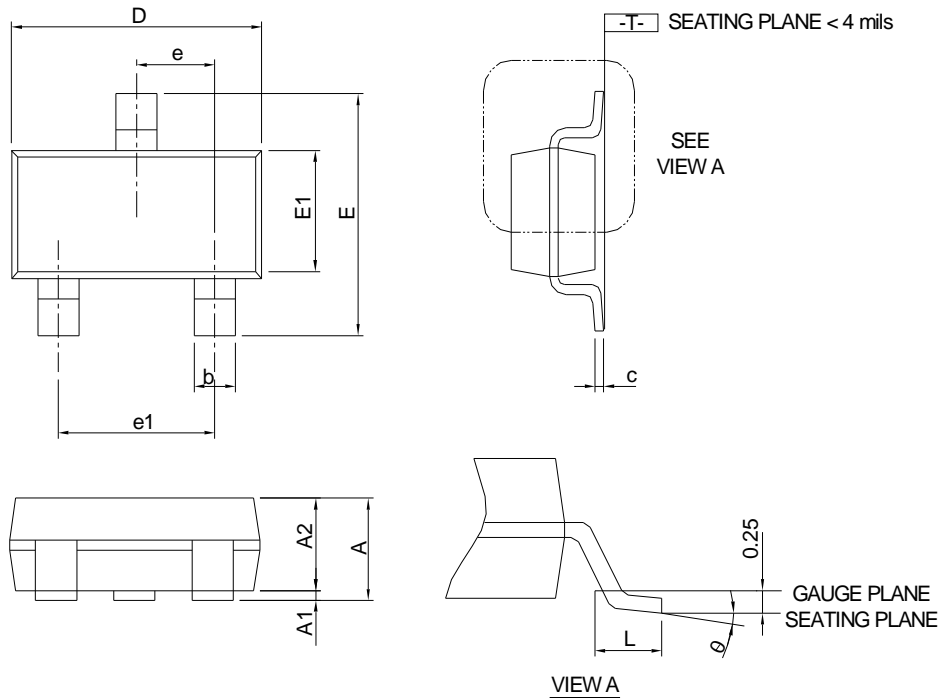
Avalanche Test Circuit and Waveforms



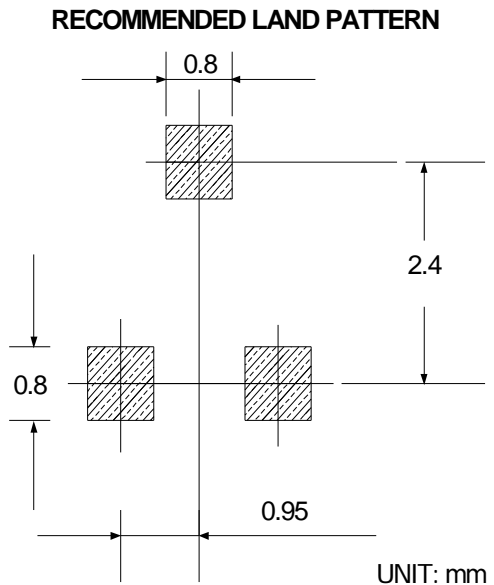
Switching Time Test Circuit and Waveforms



SOT23-3L PACKAGE OUTLINE DIMENSIONS



SYMBOL	SOT23-3			
	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	2.60	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°



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.

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