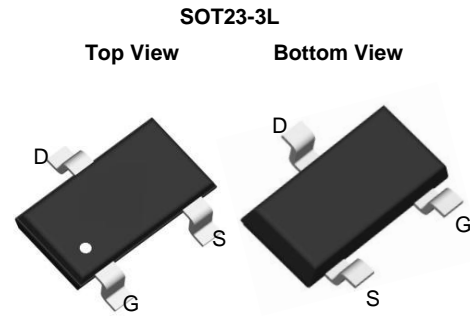


N-Channel Enhancement Mode MOSFET

Features

- 20V/6A
- $R_{DS(ON)}=20m\Omega$ (typ) @VGS=4.5V
 $R_{DS(ON)}=24m\Omega$ (typ) @VGS=2.5V
 $R_{DS(ON)}=30m\Omega$ (typ) @VGS=1.8V
- 100% UIS & RG Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

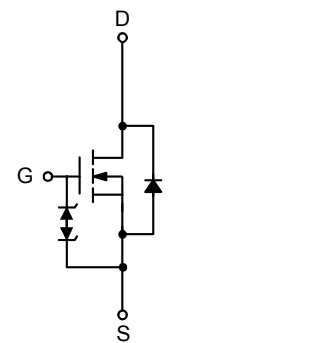


Applications

- Power Management for Industrial DC/DC Converters

Marking

Marking	AE****
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N-Channel MOSFET

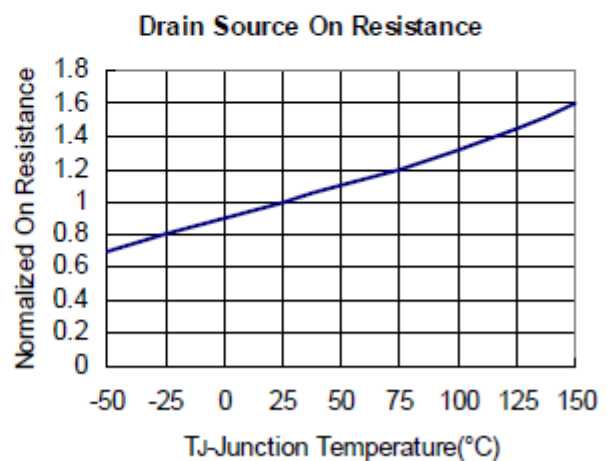
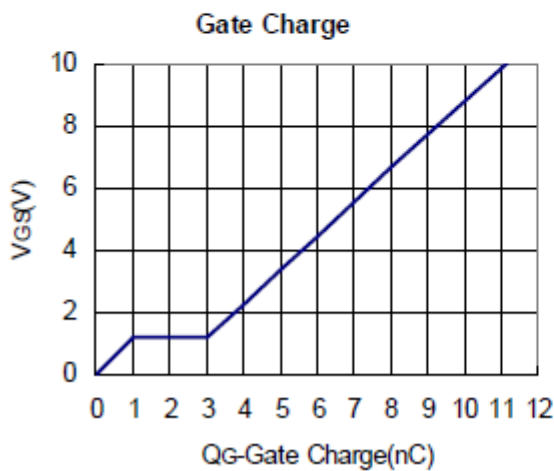
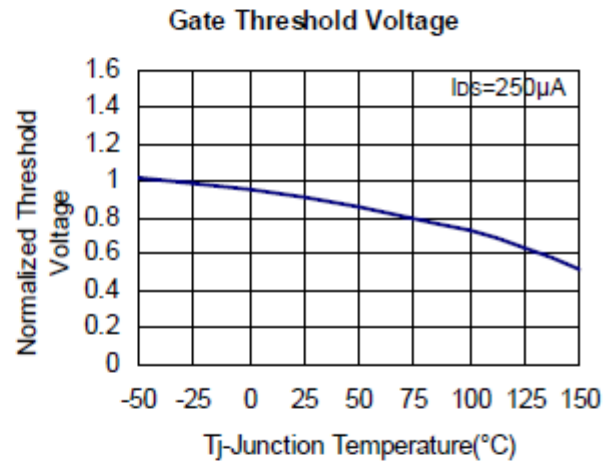
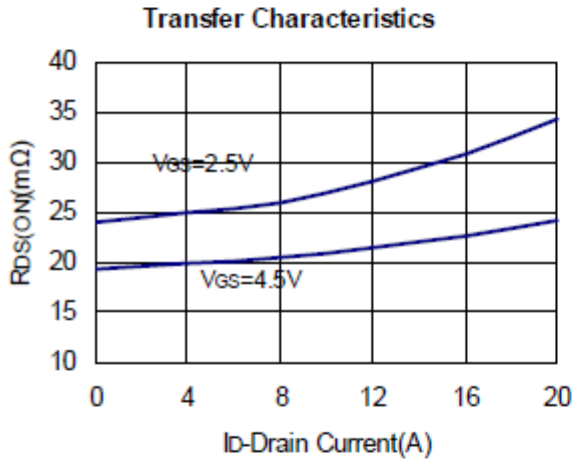
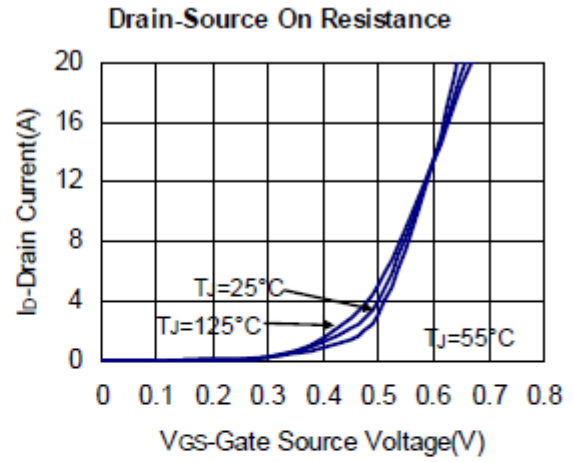
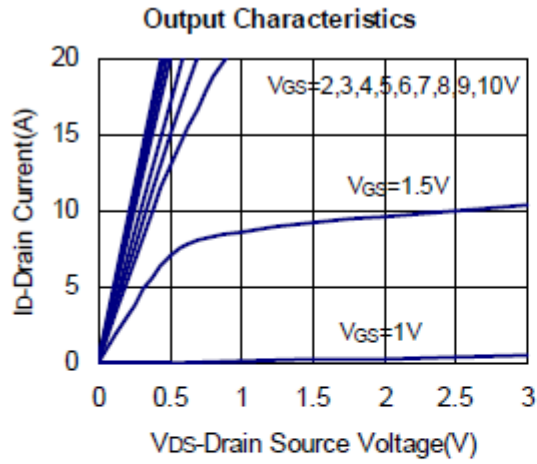
Absolute Maximum Ratings (T_A= 25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit	
Common Ratings				
V _{DSS}	Drain-Source Voltage	20	V	
V _{GSS}	Gate-Source Voltage	±12		
I _D	Continuous Drain Current	6	A	
I _{DM}	Pulsed Drain Current	20		
I _S	Diode Continuous Forward Current	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 _{θJA}	Thermal Resistance-Junction to Ambient	62.5	°C/W	

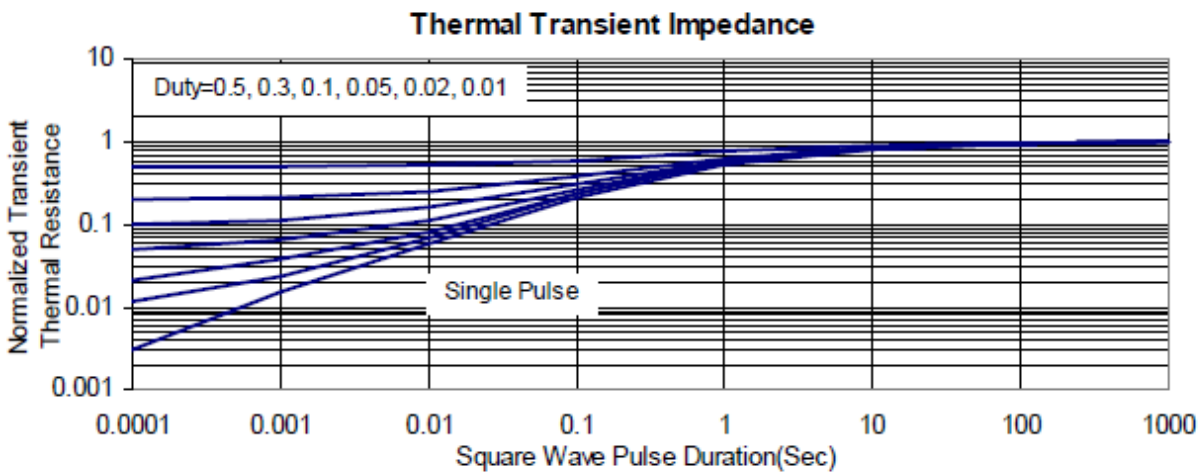
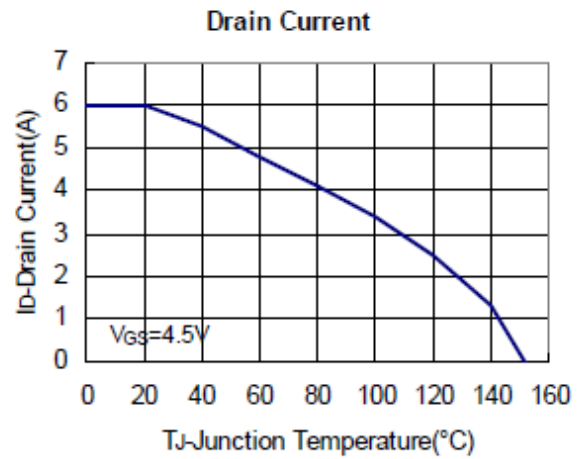
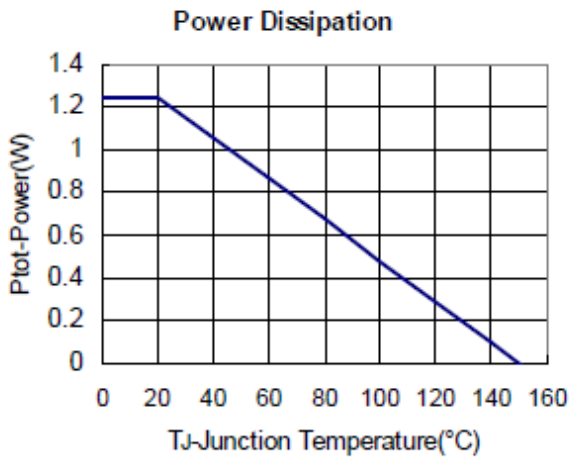
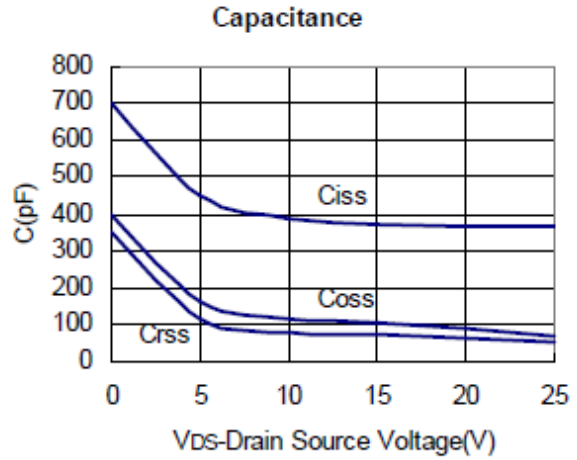
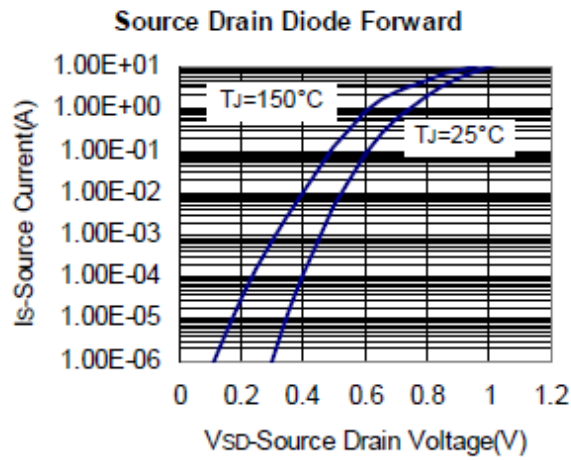
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	20	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =16V, V _{GS} =0V	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	0.5	-	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} =4.5V, I _{DS} =6A	-	20	30	mΩ
		V _{GS} =2.5V, I _{DS} =5A	-	24	35	
		V _{GS} =1.8V, I _{DS} =4A	-	30	40	
G _{fs}	Forward Transconductance	V _{DS} =5V, I _D =3.6A	-	10	-	S
Body Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} =1.7A, V _{GS} =0V	-	0.8	1.3	V
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V, Frequency=1.0MHz	-	595	-	pF
C _{oss}	Output Capacitance		-	140	-	
C _{riss}	Reverse transfer capacitance		-	125	-	
t _{d(ON)}	Turn-on delay Time	V _{GS} =4.5V, V _{DS} =10V R _G =6Ω, I _D =1A, R _L =10Ω,	-	3.6	7	nS
t _r	Turn-on rise Time		-	13.5	25	
t _{d(OFF)}	Turn-off delay Time		-	32	58	
t _f	Turn-off rise Time		-	6.6	13	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, V _{GS} =4.5V, I _{DS} =6A	-	21	-	nC
Q _{gs}	Gate-Source Charge		-	1.3	-	
Q _{gd}	Gate-Drain Charge		-	3.3	-	

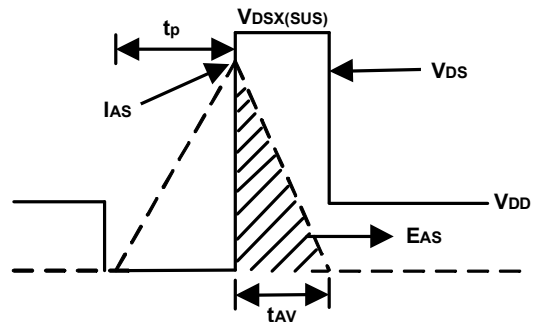
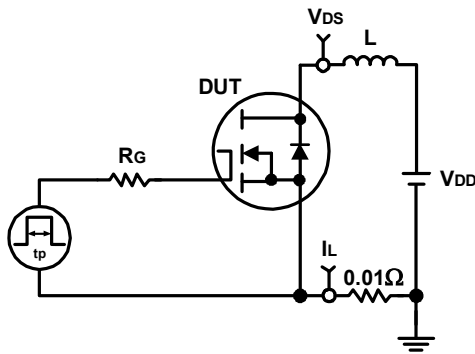
TYPICAL CHARACTERISTICS (25°C Unless Note)



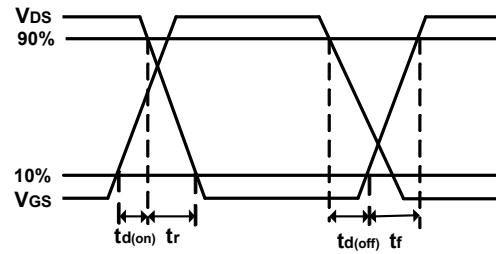
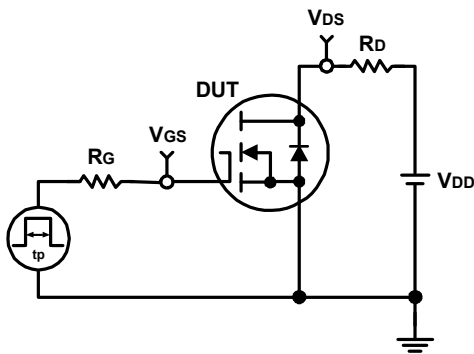
TYPICAL CHARACTERISTICS (continuous)



Avalanche Test Circuit and Waveforms

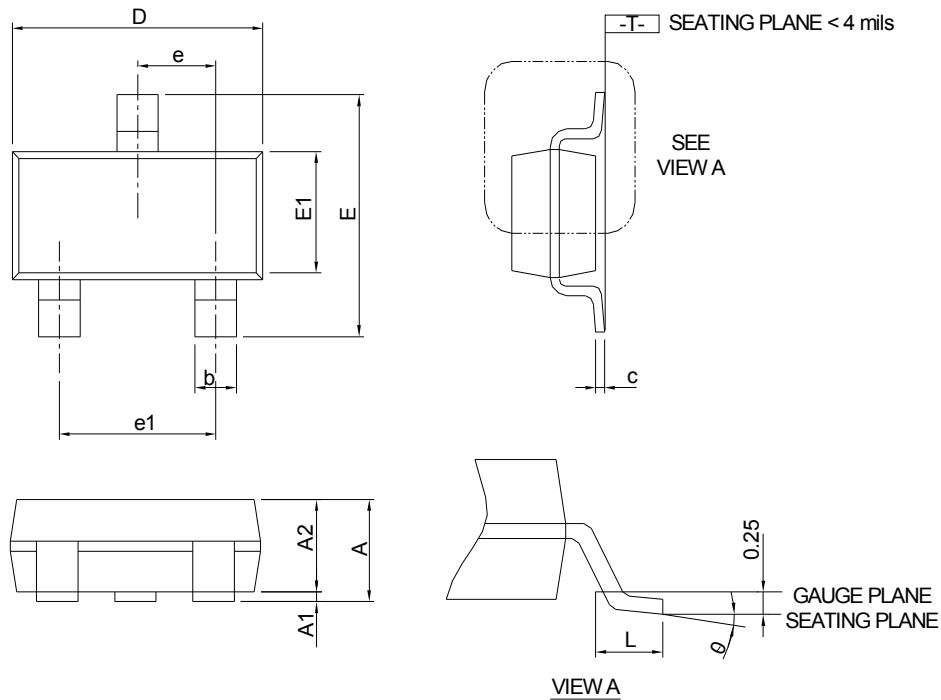


Switching Time Test Circuit and Waveforms



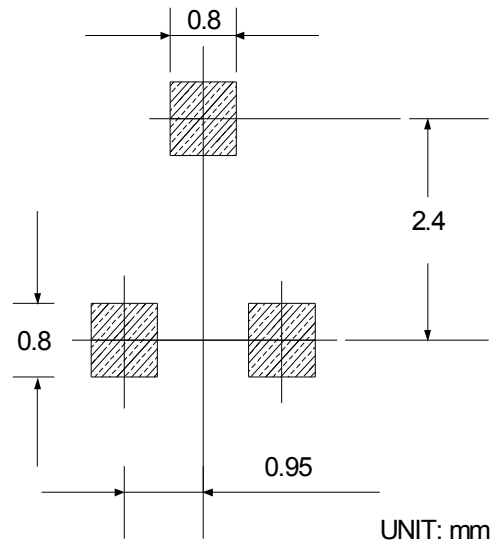
Package Information

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.

Attention

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