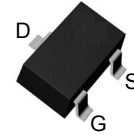


Pin Description

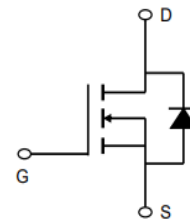
- 30V/5.7A
- $R_{DS(ON)}=18m\Omega$ (typ) @VGS=10V
 $R_{DS(ON)}=20m\Omega$ (typ) @VGS=4.5V
 $R_{DS(ON)}=24m\Omega$ (typ) @VGS=2.5V
- 100% UIS & RG Tested
- Reliableand Rugged
- Lead Freeand Green Devices Available
(RoHS Compliant)



Top View of SOT-23

Applications

- Power Management for Industrial DC/DC Converters



Absolute Maximum Ratings ($T_A=25^{\circ}C$ 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	5.7	A
I _{DM}	Pulsed Drain Current		25	
I _S	Diode Continuous Forward Current	T _C =25°C	1.7	A
PD	Power Dissipation	T _A =25°C	1.25	W
		T _A =70°C	0.8	
T _{STG} , T _J	Storage Temperature Range		-55 to 150	°C
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**

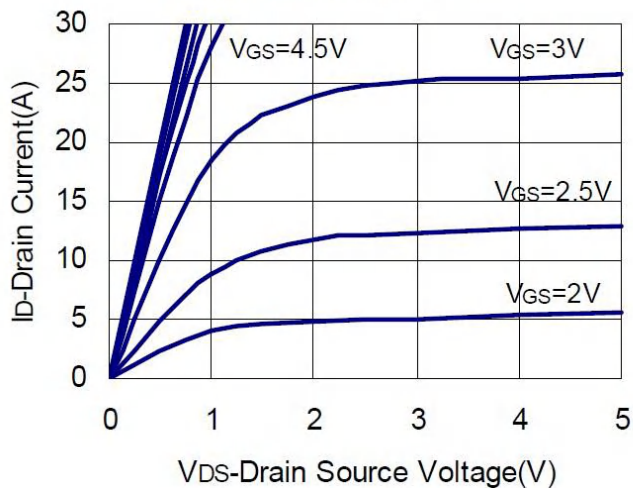
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250 A	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
		T _J =55°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} =10V, I _{DS} =5.7A	-	18	26	mΩ
		V _{GS} =4.5V, I _{DS} =5A	-	20	32	
		V _{GS} =2.5V, I _{DS} =3.2A	-	24	46	
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	-	416	-	pF
C _{oss}	Output Capacitance		-	62	-	
C _{rss}	Reverse transfer capacitance		-	40	-	
t _{d(ON)}	Turn-on delay Time	V _{GS} =10V ,V _{DS} =15V R _G =6Ω, I _D =1A,R _L =15Ω,	-	7	15	nS
t _r	Turn-on rise Time		-	10	20	
t _{d(OFF)}	Turn-off delay Time		-	20	40	
t _f	Turn-off rise Time		-	11	20	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _{DS} =5.6A	-	10	19	nC
Q _{gs}	Gate-Source Charge		-	1.7	-	
Q _{gd}	Gate-Drain Charge		-	3.2	-	

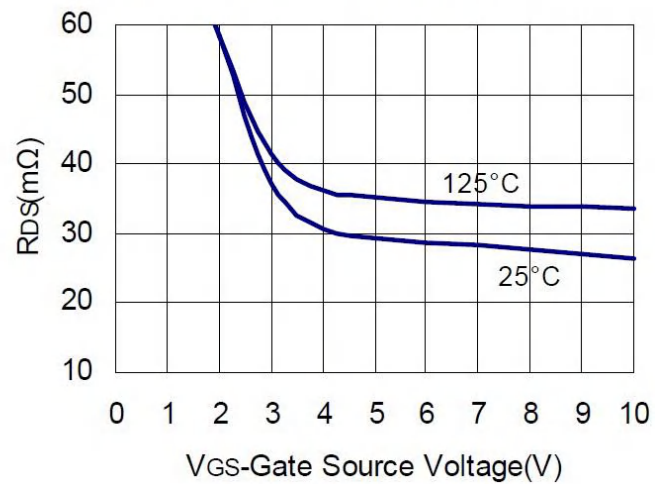
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress rating only and functional device operation is not implied

TYPICAL CHARACTERISTICS (25 °C Unless Note)

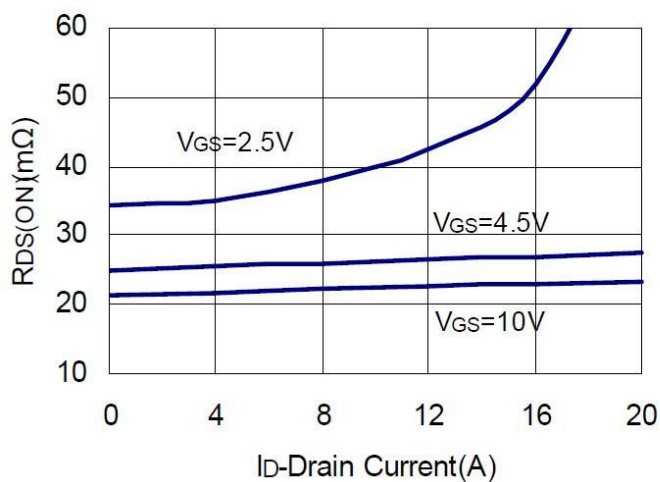
Output Characteristics



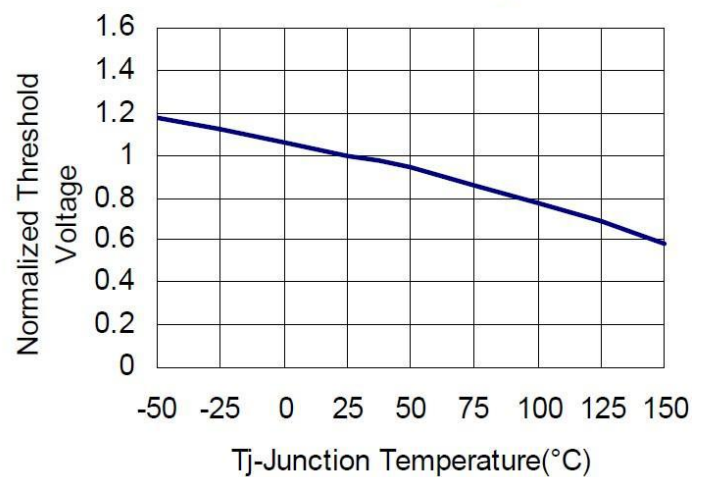
Drain-Source On Resistance



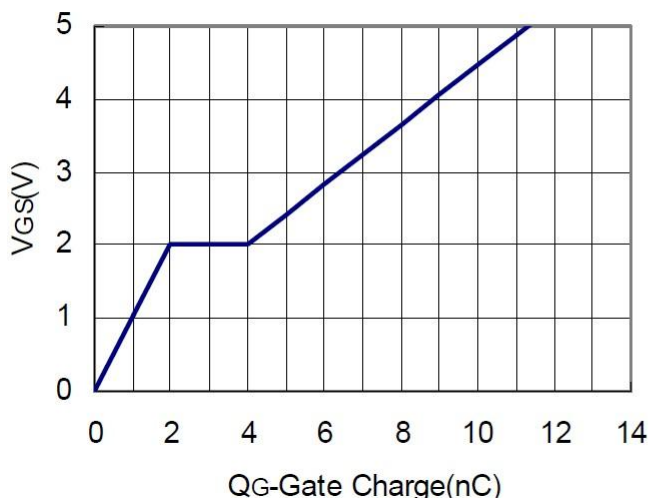
Drain Source On Resistance



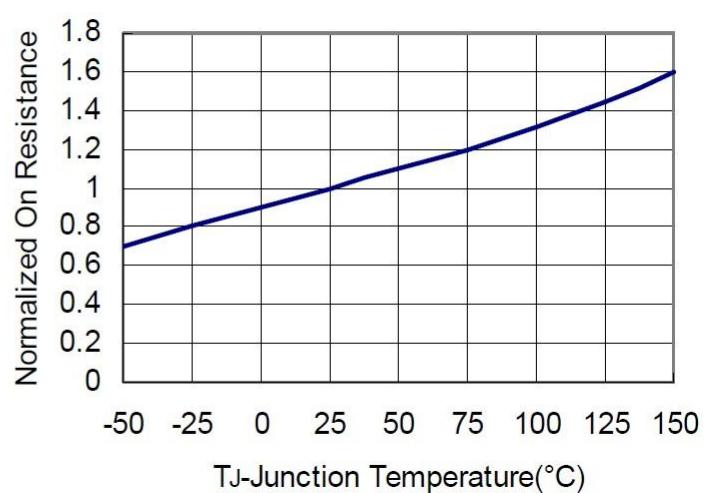
Gate Threshold Voltage



Gate Charge

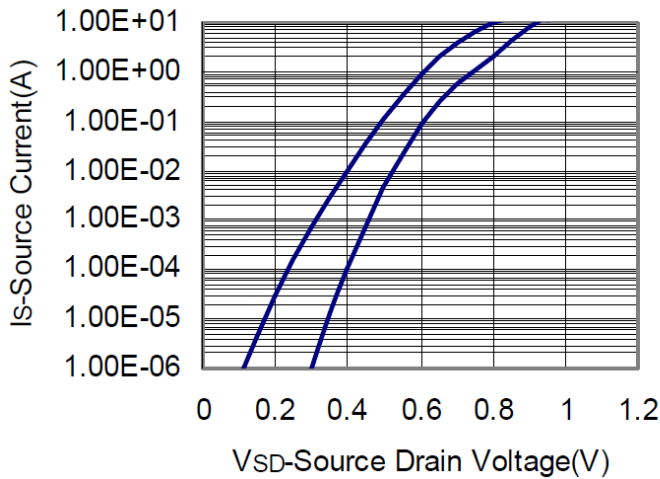


Drain Source On Resistance

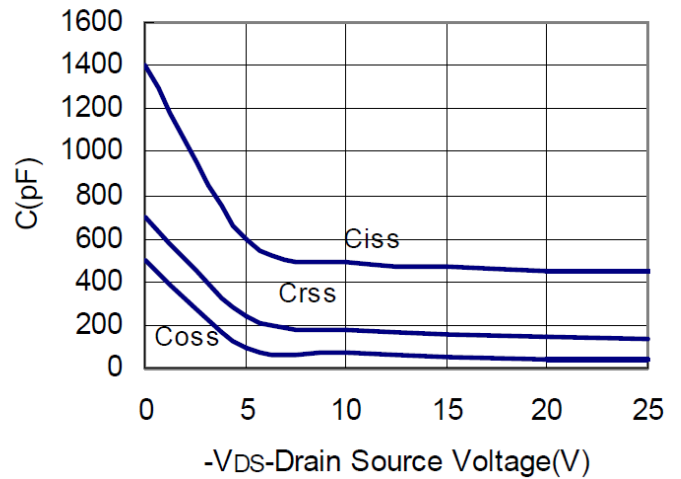


TYPICAL CHARACTERISTICS (continuous)

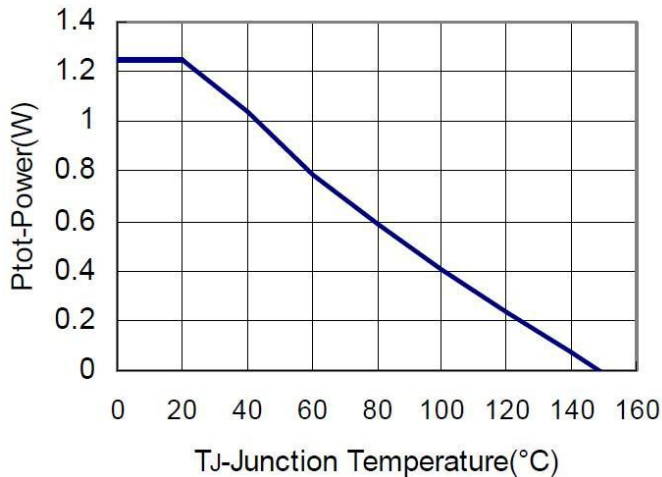
Source Drain Diode Forward



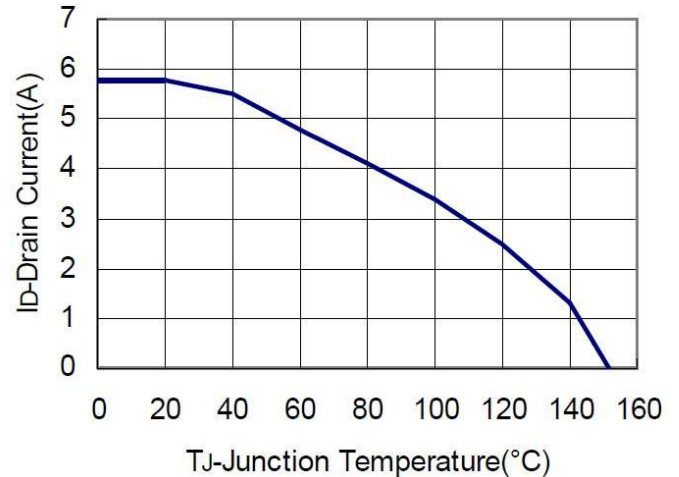
Capacitance



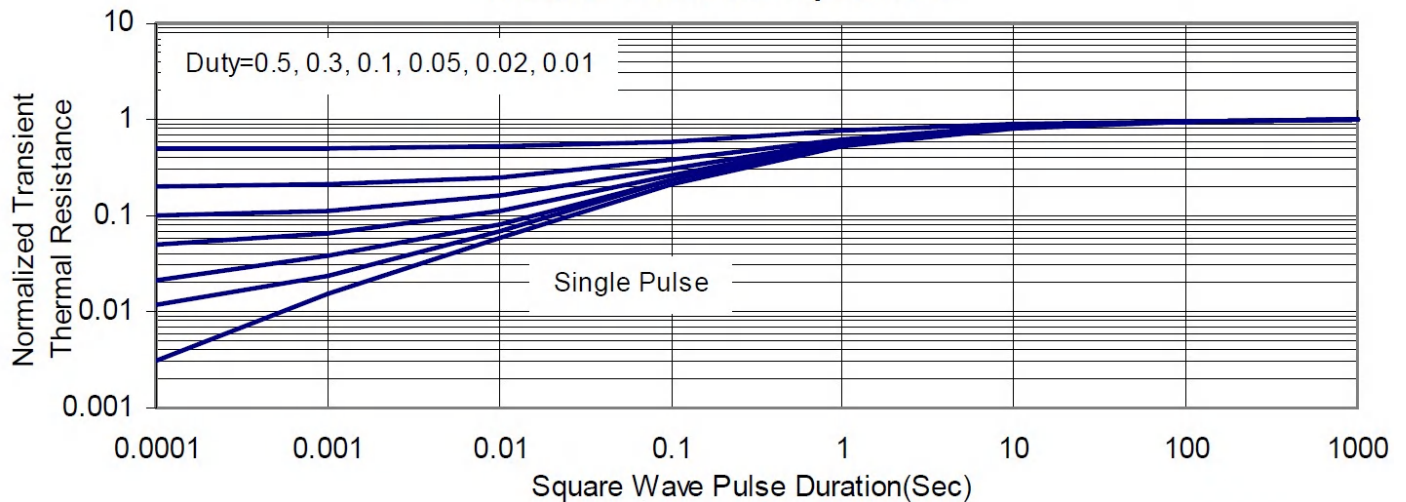
Power Dissipation



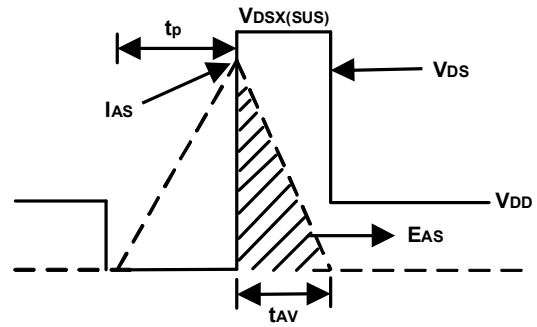
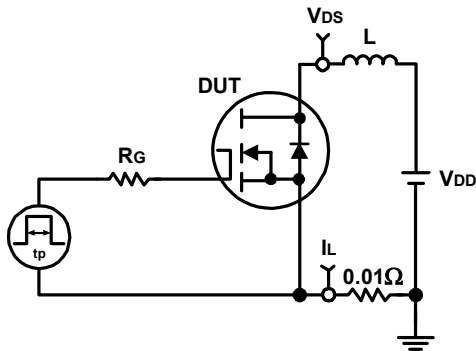
Drain Current



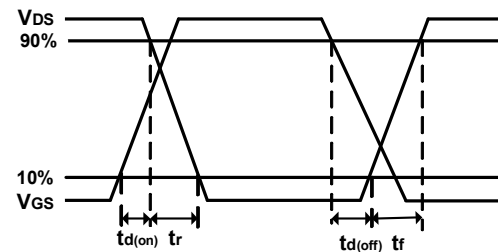
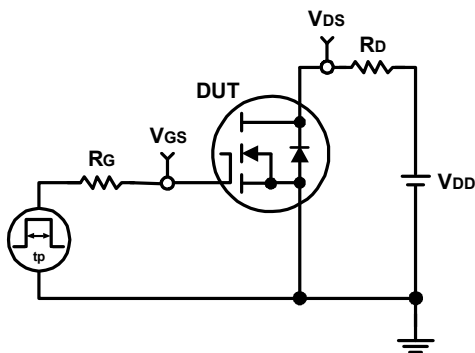
Thermal Transient Impedance



Avalanche Test Circuit and Waveforms

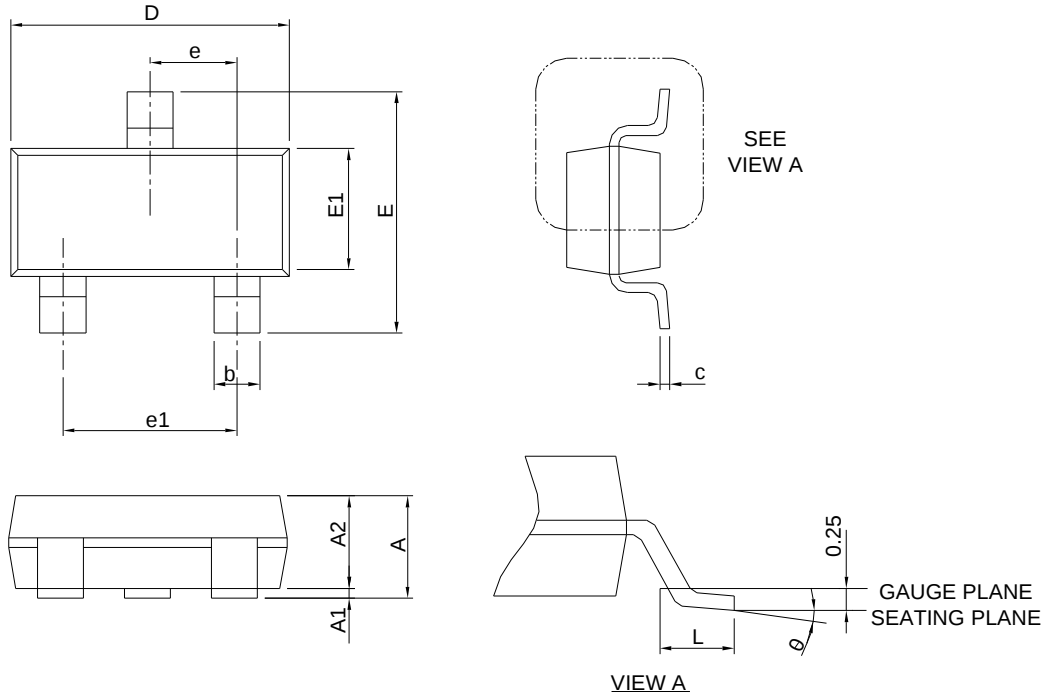


Switching Time Test Circuit and Waveforms



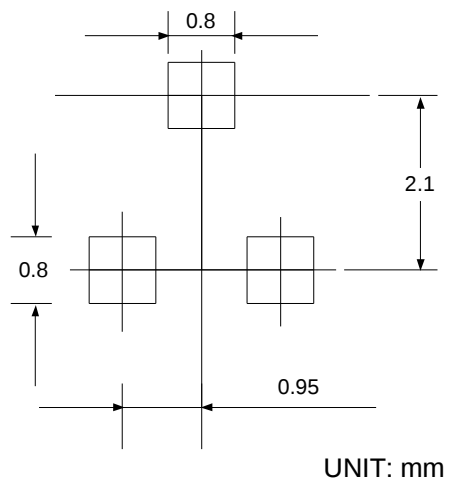
Package Information

SOT-23



SYMBOL	SOT-23			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.20	-	0.047
A1	0.00	0.10	0.000	0.004
A2	0.90	1.10	0.035	0.043
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	2.20	2.60	0.086	0.102
E1	1.20	1.40	0.047	0.055
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



UNIT: mm

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.