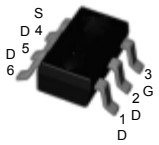
Features

- -20V/-7A ,
  $R_{DS(ON)}$= 22mΩ (typ.) @ V_{GS}=-4.5V
  $R_{DS(ON)}$= 26mΩ (typ.) @ V_{GS}=-2.5V
  $R_{DS(ON)}$=32mΩ (typ.) @ V_{GS}=-1.8V
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

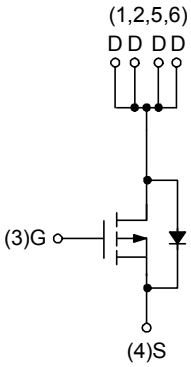
Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

Pin Description



Top View of SOT-23-6



P-Channel MOSFET

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

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		-20	V
V_{GSS}	Gate-Source Voltage		±12	
I_D*	Continuous Drain Current	T_A=25°C	-7	A
		T_A=70°C	-5.3	
I_{DM}*	300μs Pulsed Drain Current	T_A=25°C	-21	
		T_A=70°C	-17.8	
I_S*	Diode Continuous Forward Current		-7	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	
P_D*	Maximum Power Dissipation	T_A=25°C	2.1	W
		T_A=70°C	1.3	
$R_{\theta JA}$*	Thermal Resistance-Junction to Ambient	t ≤ 10s	60	°C/W
		Steady state	100	

Note: *Surface Mounted on 1in^2 pad area, t ≤ 10sec.

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	-0.7	-1	V
I_{GSS}	Gate Leakage Current	V_{GS}=±12V, V_{DS}=0V	-	-	±100	nA
$R_{DS(ON)}$ [a]	Drain-Source On-State Resistance	V_{GS}=-4.5V, I_{DS}=-5.6A	-	22	26	mΩ
		V_{GS}=-2.5V, I_{DS}=-3.5A	-	26	32	
		V_{GS}=-1.8V, I_{DS}=-1.5A	-	32	104	
V_{SD} [a]	Diode Forward Voltage	I_{SD}=-1A, V_{GS}=0V	-	-0.7	-1	V
Gate Charge Characteristics [b]						
Q_g	Total Gate Charge	V_{DS}=-10V, V_{GS}=-4.5V, I_{DS}=-5.6A	-	6.8	-	nC
Q_{gs}	Gate-Source Charge		-	0.8	-	
Q_{gd}	Gate-Drain Charge		-	2.5	-	

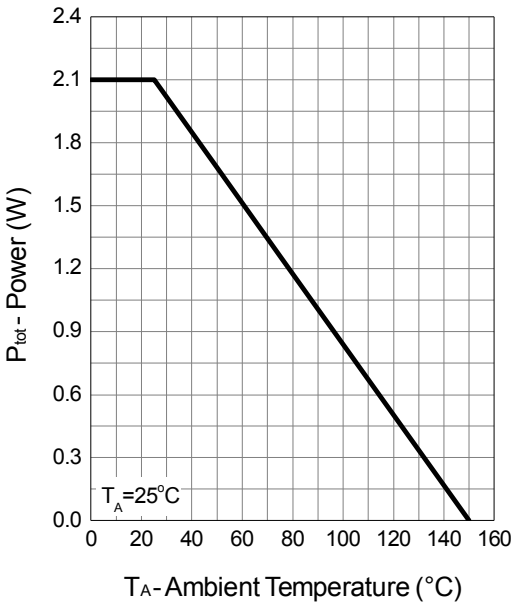
Electrical Characteristics (Cont.) (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Dynamic Characteristics [b]						
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,F=1MHz	-	3.6	-	Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-15V, Frequency=1.0MHz	-	1690	-	pF
C_{oss}	Output Capacitance		-	222	-	
C_{rss}	Reverse Transfer Capacitance		-	120	-	
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=-10V, R_L=10Ω, I_{DS}=-1A, V_{GEN}=-4.5V, R_G=6Ω	-	7.2	-	ns
t_r	Turn-on Rise Time		-	13.4	-	
$t_{d(OFF)}$	Turn-off Delay Time		-	26	-	
t_f	Turn-off Fall Time		-	17	-	
t_{rr}	Reverse Recovery Time	I_{SD}=-5.6A, dI_{SD}/dt =100A/μs	-	18	-	ns
Q_{rr}	Reverse Recovery Charge		-	7	-	nC

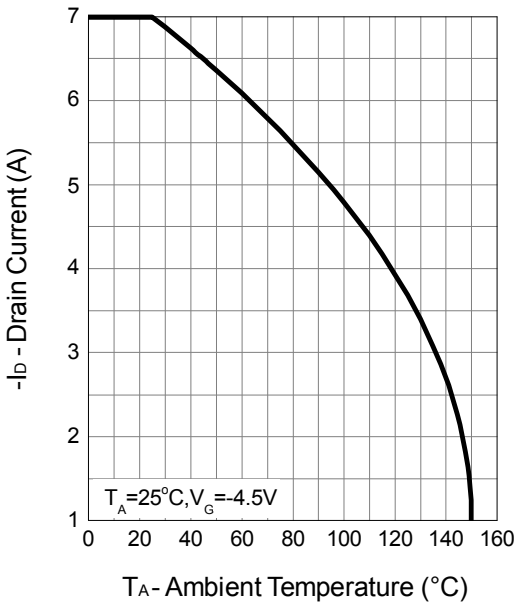
Note a : Pulse test ; pulse width≤300μs, duty cycle≤2%.
Note b : Guaranteed by design, not subject to production testing.

Typical Operating Characteristics

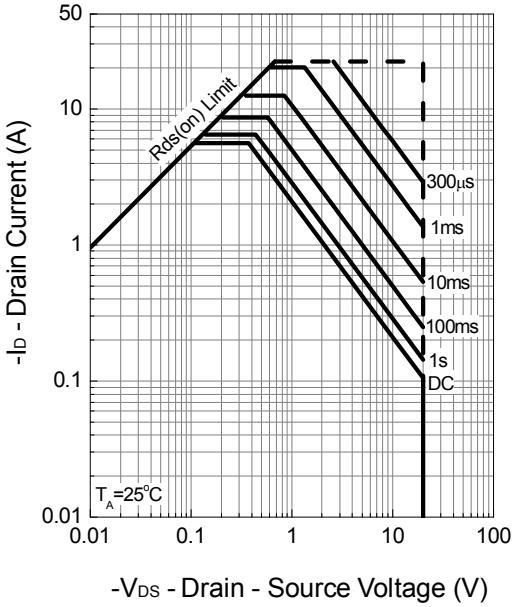
Power Dissipation



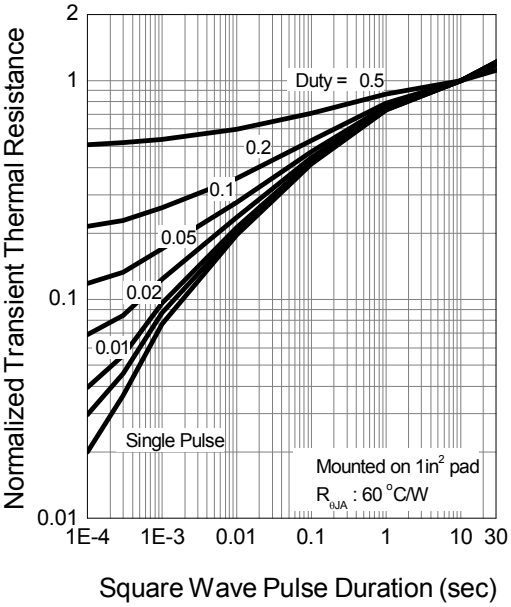
Drain Current



Safe Operation Area

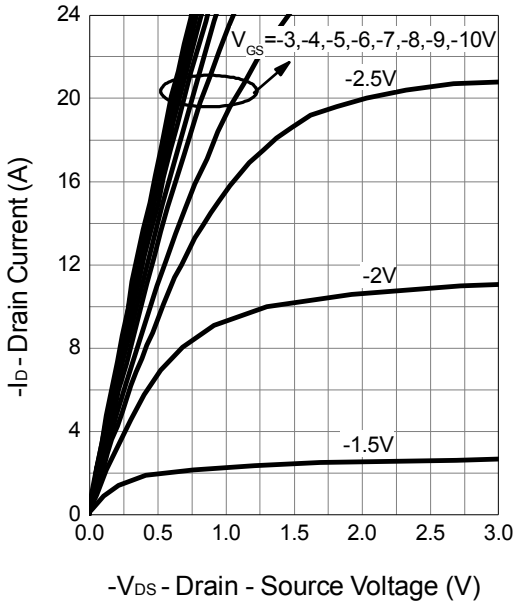


Thermal Transient Impedance

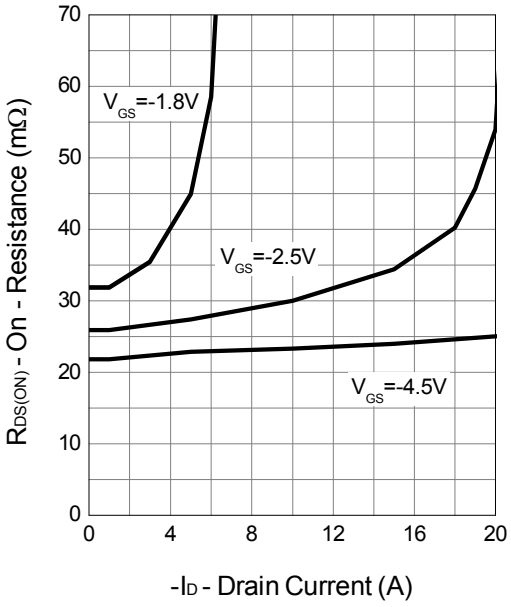


Typical Operating Characteristics (Cont.)

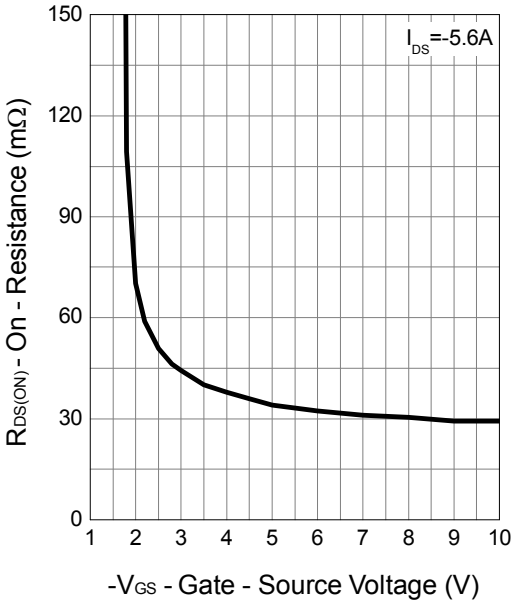
Output Characteristics



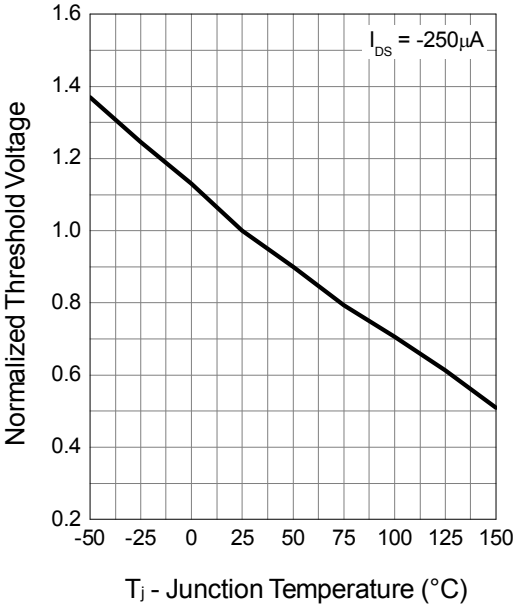
Drain-Source On Resistance



Gate-Source On Resistance

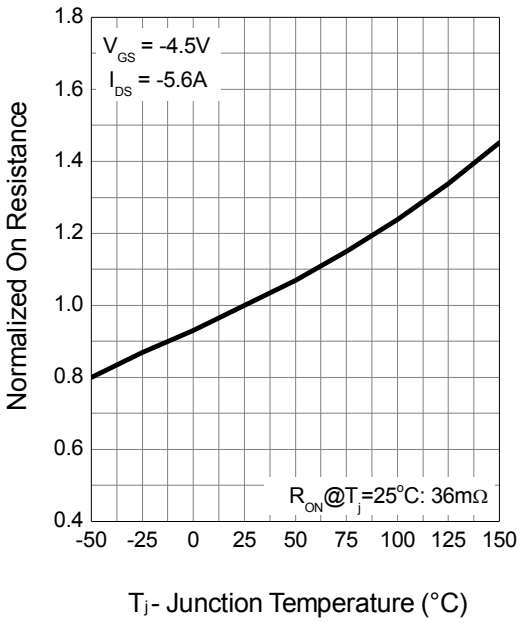


Gate Threshold Voltage

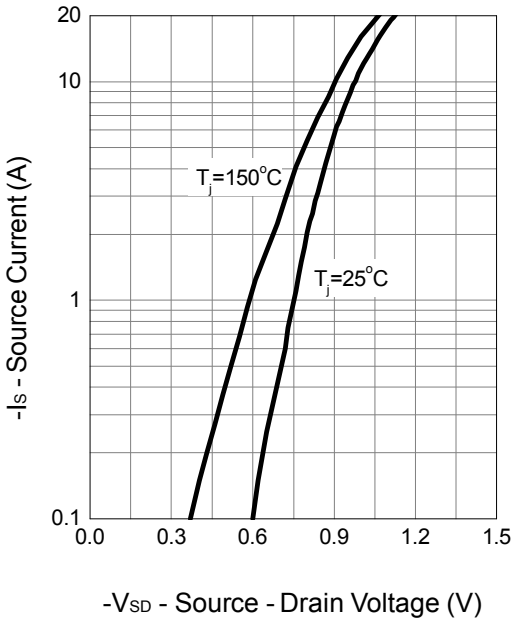


Typical Operating Characteristics (Cont.)

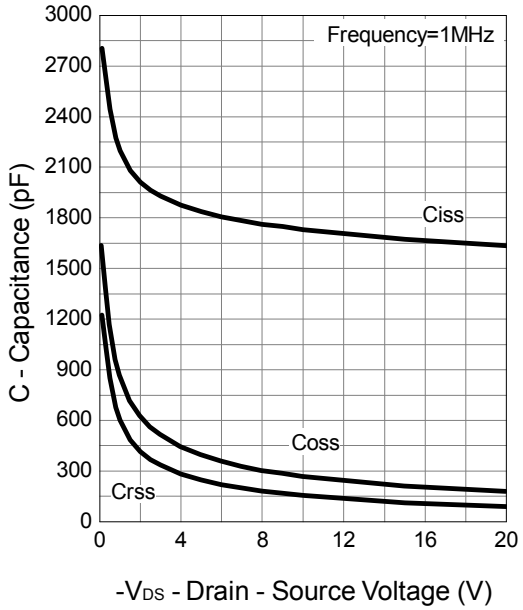
Drain-Source On Resistance



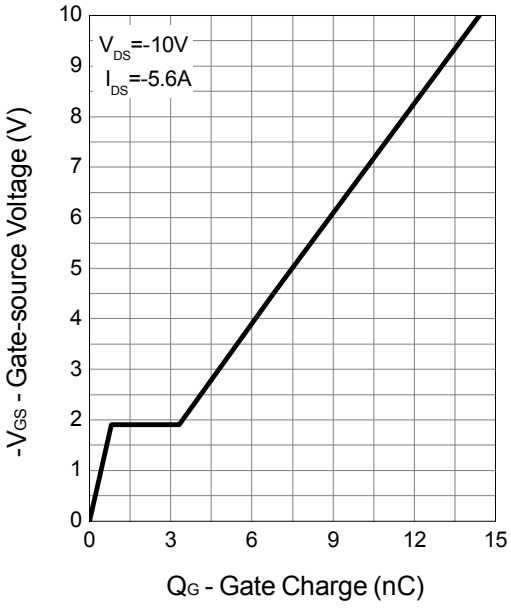
Source-Drain Diode Forward



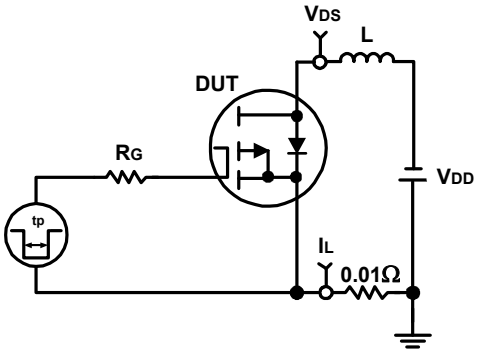
Capacitance

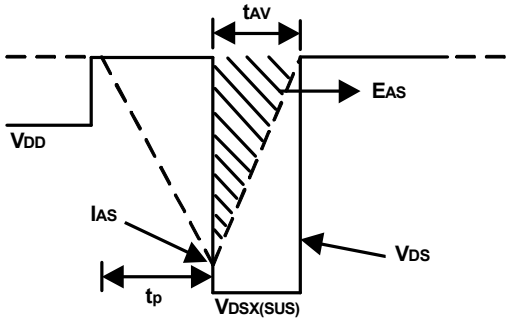


Gate Charge

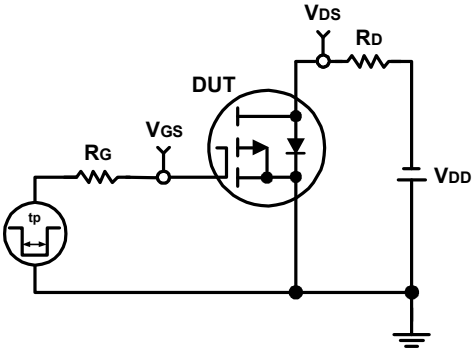


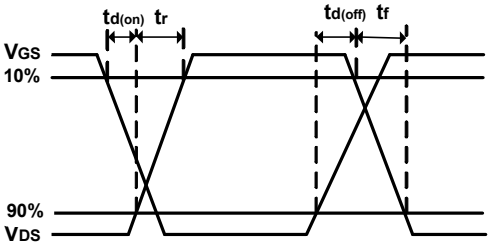
Avalanche Test Circuit and Waveforms



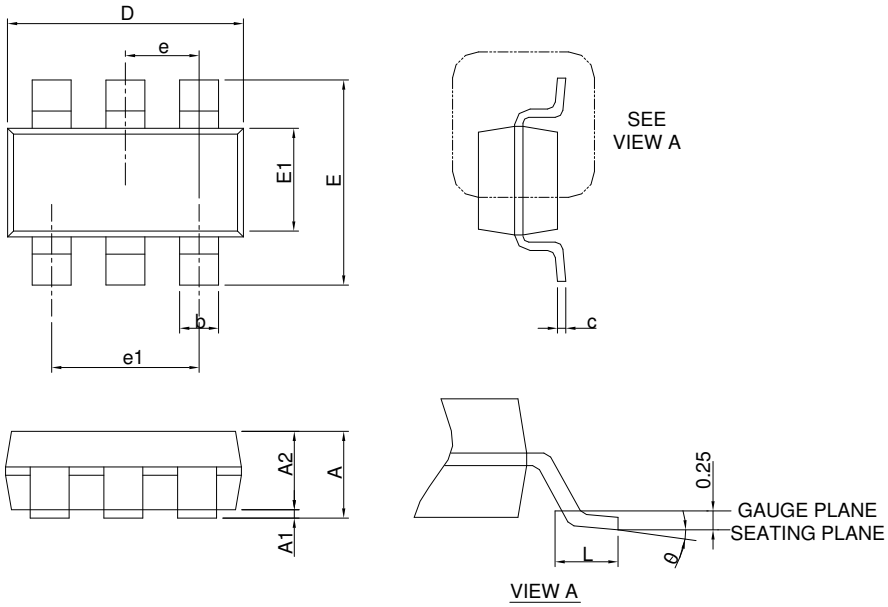


Switching Time Test Circuit and Waveforms





Package Information



SYMBOLS	SOT-23-6			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	0.90	-	0.035
A1	0.00	0.15	0.000	0.006
A2	0.65	0.85	0.026	0.033
b	0.36	0.50	0.014	0.020
c	0.14	0.20	0.006	0.008
D	2.85	3.05	0.112	0.120
E	2.65	2.95	0.104	0.116
E1	1.60	1.70	0.063	0.067
e	0.90	1.00	0.035	0.039
e1	1.80	2.00	0.071	0.079
L	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

RECOMMENDED LAND PATTERN