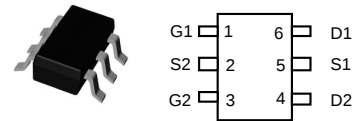
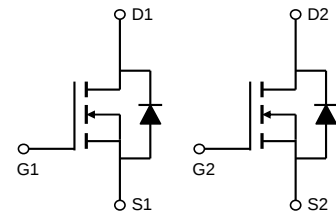


- 20V/5A
- $R_{DS(ON)}=20m\Omega$ (typ) @VGS=10V
 $R_{DS(ON)}=22m\Omega$ (typ) @VGS=4.5V
- 100% UIS & RG Tested
- Reliableand Rugged
- Lead Freeand Green Devices Available
(RoHS Compliant)


SOT23-6L top view

Applic

- Power Management for Industrial Converters



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	5	A
I _{DM} ¹	Pulsed Drain Current	15	A
I _S ²	Diode Continuous Forward Current	5	A
T _{STG} , T _J	Storage Temperature Range	-55 to 150	°C
P _D	Power Dissipation	1.25	W
R _{θJA} ²	Thermal Resistance-Junction to Ambient	100	°C/w

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

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
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	25	mΩ
		V _{GS} =2.5V, I _{DS} =5A	-	22	30	
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =5A		10		S
Body Diode Characteristics						
V _{SD} ³	Diode Forward Voltage	I _{SD} =1A, V _{GS} =0V	0.5	-	1.3	V
Dynamic Characteristics ⁴						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V, Frequency=1.0MHz	-	550	-	pF
C _{oss}	Output Capacitance		-	125	-	
C _{rss}	Reverse transfer capacitance		-	64	-	
t _{d(ON)}	Turn-on delay Time	V _{GS} =4.5V ,V _{DS} =10V R _G =10Ω, I _D =6A	-	9	-	nS
t _r	Turn-on rise Time		-	10	-	
t _{d(OFF)}	Turn-off delay Time		-	32	-	
t _f	Turn-off rise Time		-	24	-	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, V _{GS} =4.5V, I _{DS} =6A	-	9.5	-	nC
Q _{gs}	Gate-Source Charge		-	2.1	-	
Q _{gd}	Gate-Drain Charge		-	1.4	-	

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Electrical and Thermal Characteristics

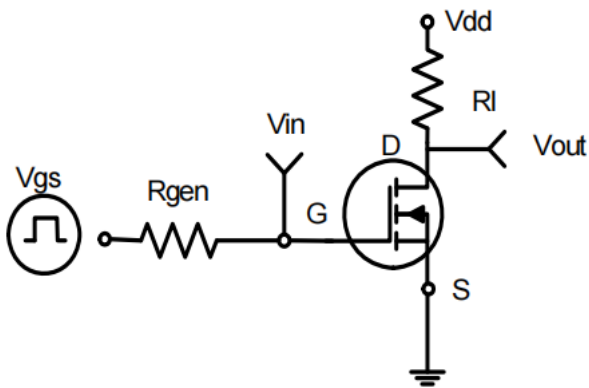


Figure 1: Switching Test Circuit

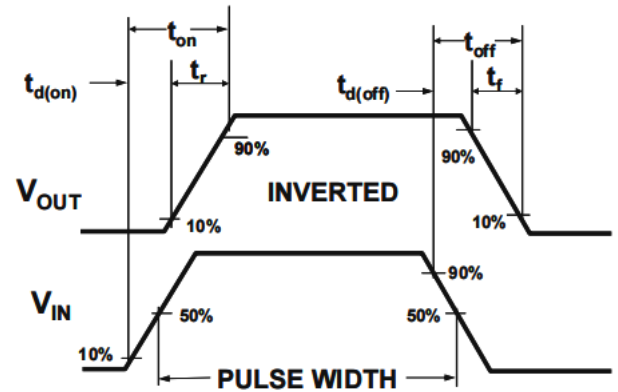


Figure 2: Switching Waveforms

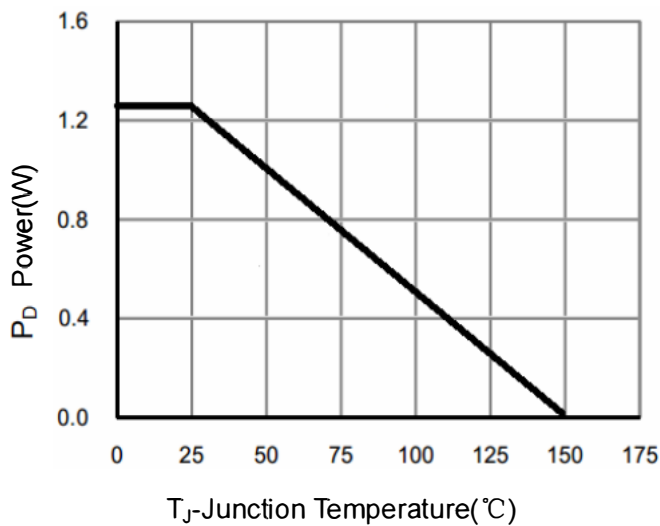


Figure 3 Power Dissipation

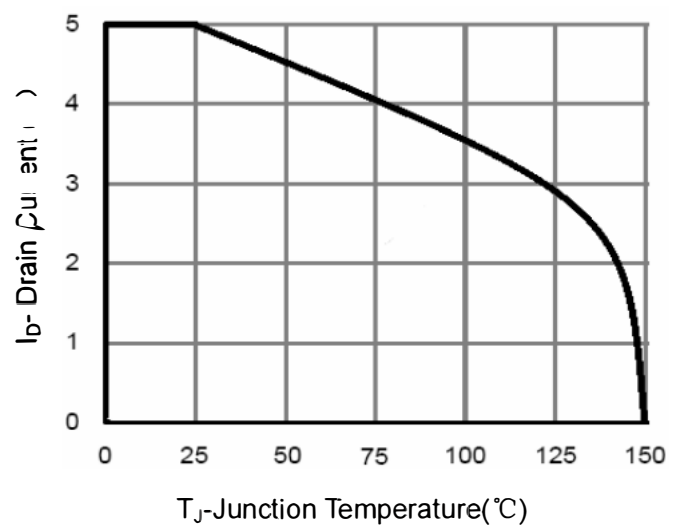


Figure 4 Drain Current

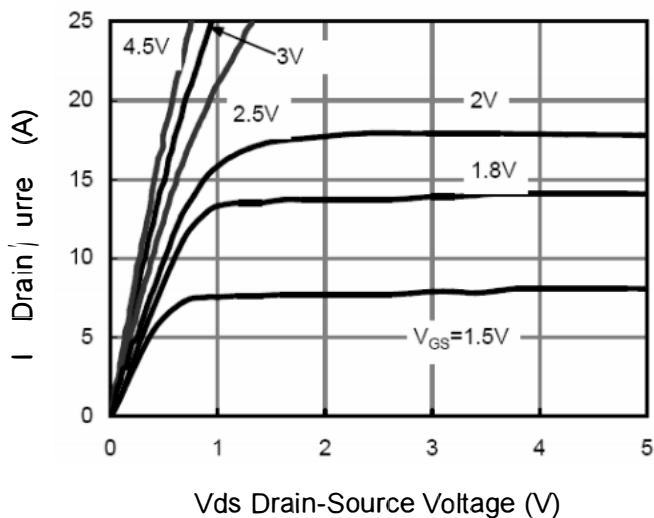


Figure 5 Output Characteristics

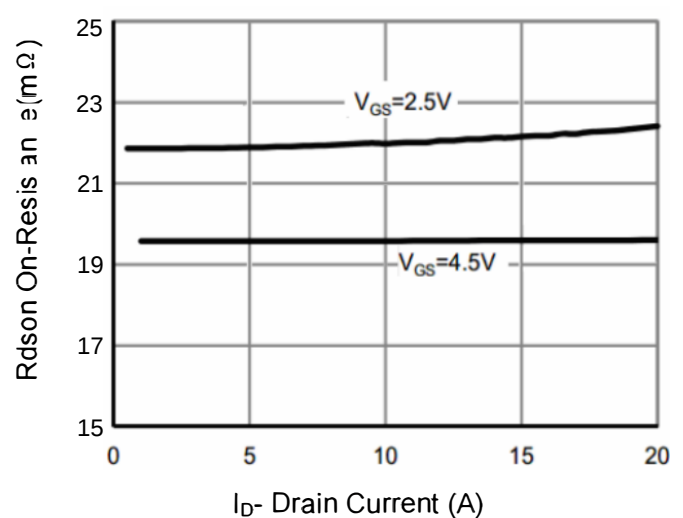


Figure 6 Drain-Source On-Resistance

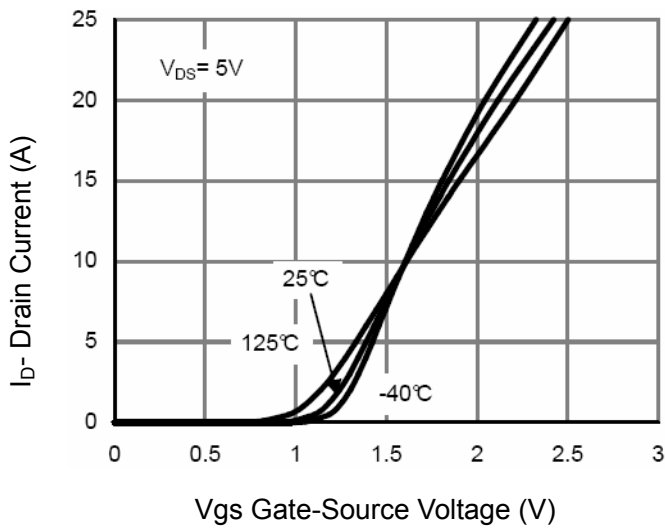


Figure 7 Transfer Characteristics

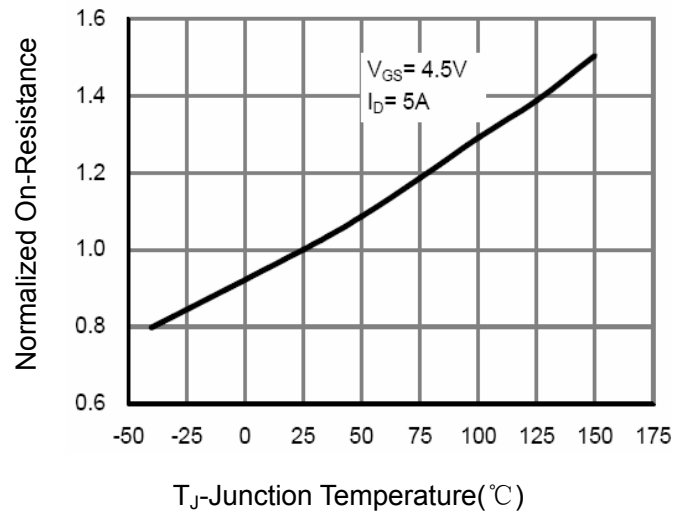


Figure 8 Drain-Source On-Resistance

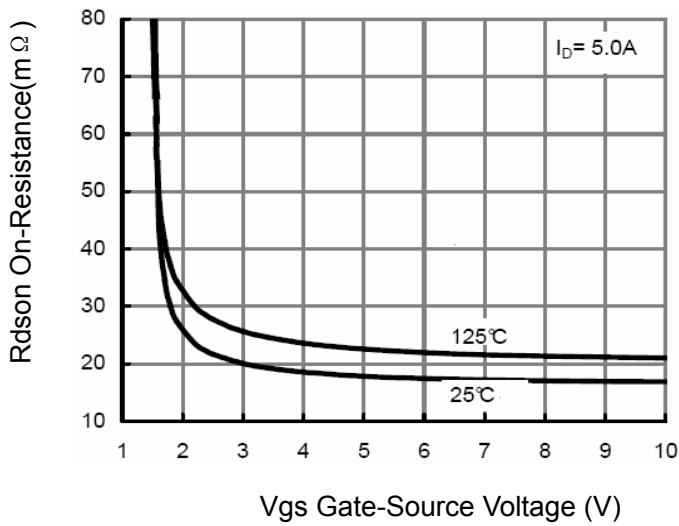


Figure 9 Rdson vs Vgs

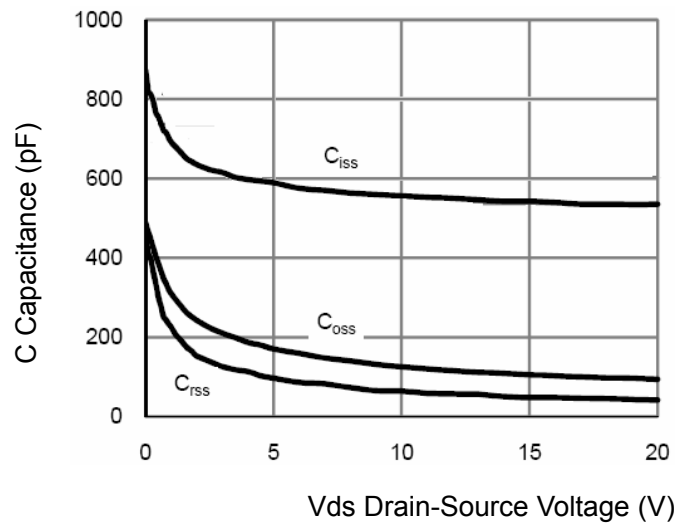


Figure 10 Capacitance vs Vds

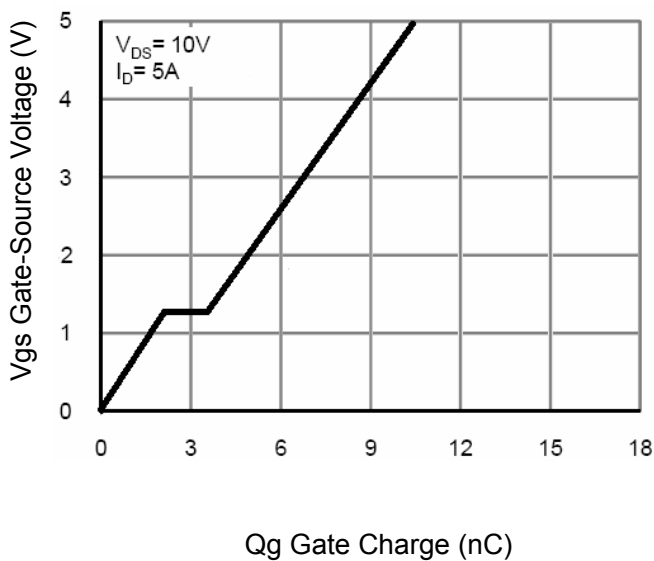


Figure 11 Gate Charge

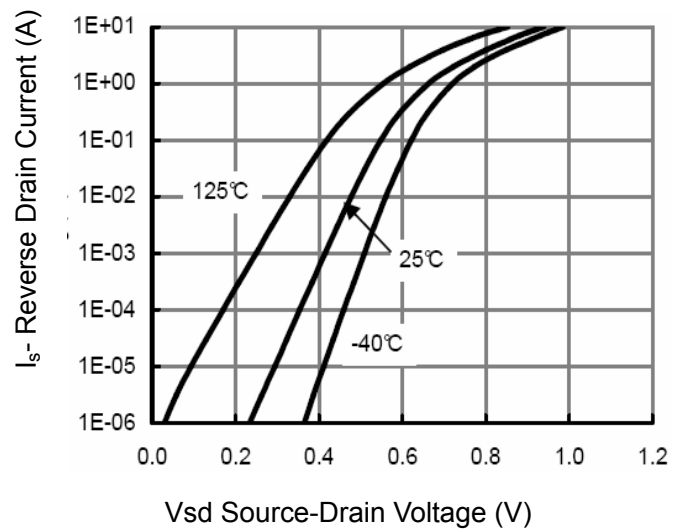
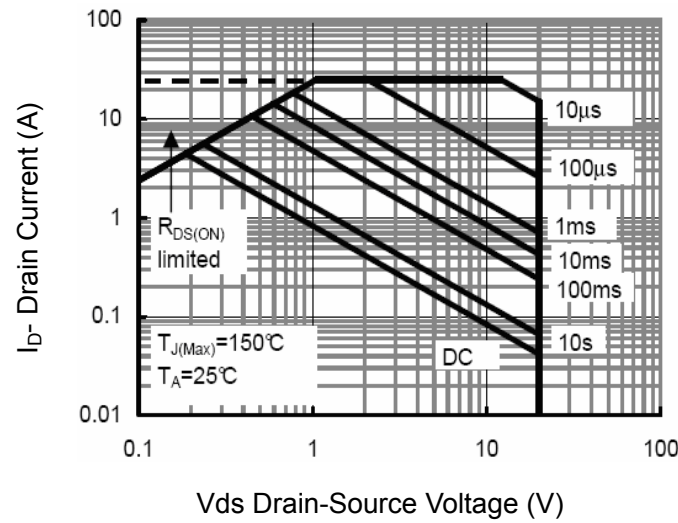
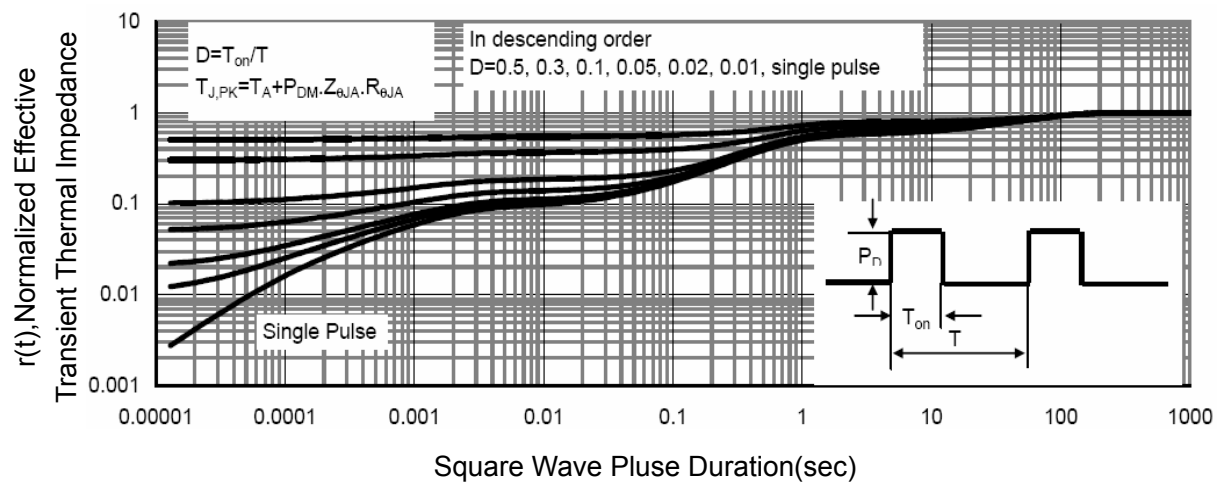
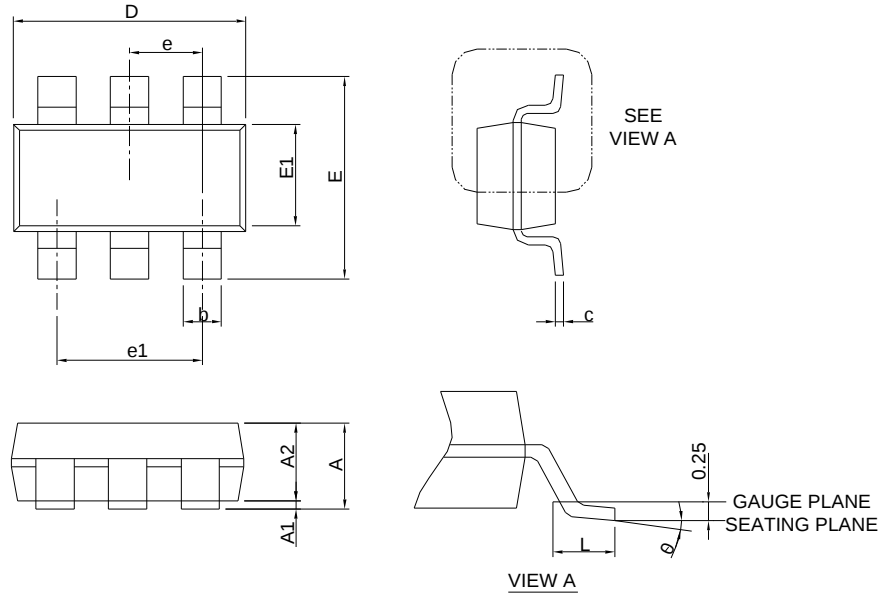


Figure 12 Source- Drain Diode Forward


Figure 13 Safe Operation Area

Figure 14 Normalized Maximum Transient Thermal Impedance

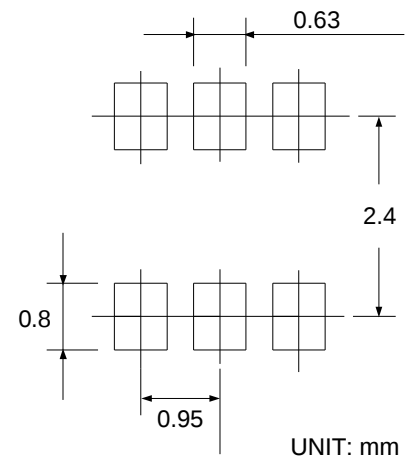
Package Information

SOT-23-6



SYMBOL	SOT-23-6			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.25	-	0.049
A1	0.00	0.05	0.000	0.002
A2	0.90	1.20	0.035	0.047
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 : 1. Follow JEDEC TO-178 AB.

2. 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.