

Features

- Trench LV MOSFET technology
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

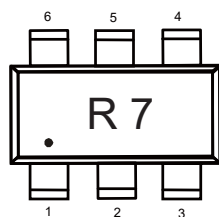
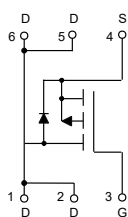
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 78°C/W Junction to Ambient (Note 2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	$T_A=25^{\circ}\text{C}$	I_D	A
	$T_A=70^{\circ}\text{C}$		
Pulsed Drain Current (Note 3)	I_{DM}	-12	A
Total Power Dissipation (Note 4)	P_D	1.6	W

Note:

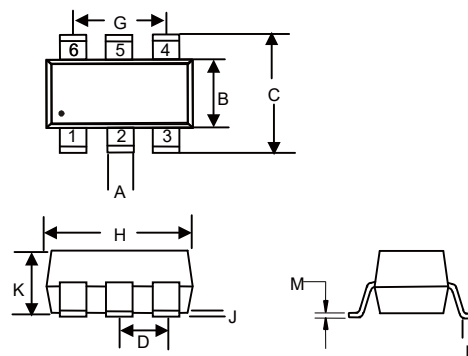
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz Copper, in a still air environment with $T_A=25^{\circ}\text{C}$.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_d is based on max. junction temperature, using junction-ambient thermal resistance.

Internal Structure and Marking Code



P-CHANNEL MOSFET

SOT23-6L



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.50	3.10	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-30			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.4	-3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-4.1A		39	50	mΩ
		V _{GS} =-4.5V, I _D =-3A		54	70	
Gate Resistance	R _g	f=1MHz, Open Drain		10		Ω
Forward tranconductance	g _{FS}	V _{DS} =-5V, I _D =-4A		11		S
Diode Characteristics						
Continuous Body Diode Current	I _S				-4.1	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-4.1A			-1.2	V
Reverse Recovery Time	t _{rr}	I _S =-2A,di/dt=100A/μs		24		ns
Reverse Recovery Charge	Q _{rr}			4.3		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V,f=1MHz		581		pF
Output Capacitance	C _{oss}			72		
Reverse Transfer Capacitance	C _{rss}			62		
Total Gate Charge	Q _g	V _{DS} =-15V,V _{GS} =-10V,I _D =-2A		12.7		pF
Gate-Source Charge	Q _{gs}			1.5		
Gate-Drain Charge	Q _{gd}			2		
Turn-On Delay Time	t _{d(on)}	V _{GS} =-10V,V _{DD} =-15V, R _G =3Ω,I _D =-2A		6.3		ns
Turn-On Rise Time	t _r			3.6		
Turn-Off Delay Time	t _{d(off)}			23.7		
Turn-Off Fall Time	t _f			9.3		

Curve Characteristics

Fig. 1 Typical Output Characteristics

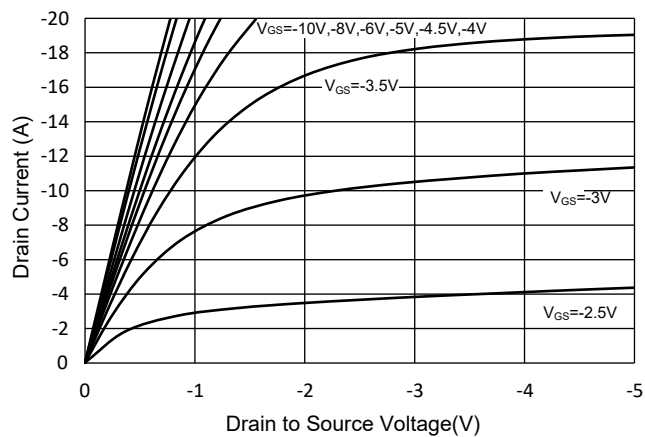


Fig.2 Transfer Characteristic

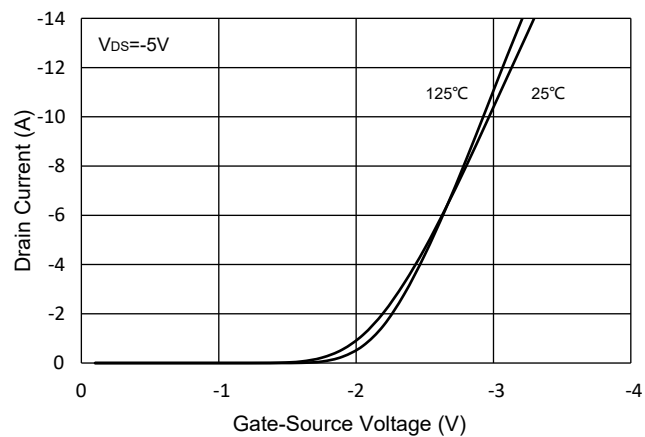


Fig.3 $R_{DS(on)}$ - V_{GS}

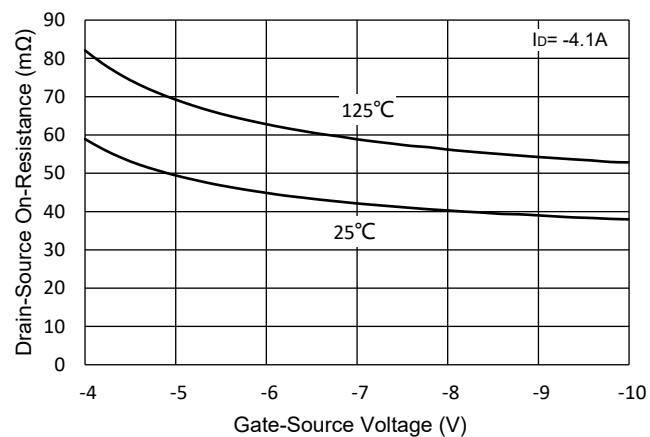


Fig.4 $R_{DS(ON)}$ - I_D

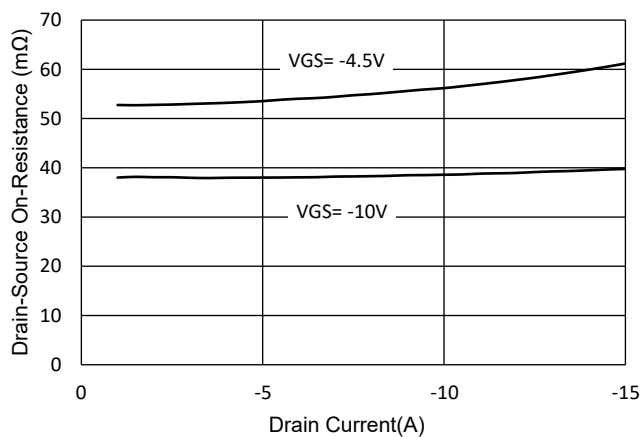


Fig.5 Capacitance Characteristics

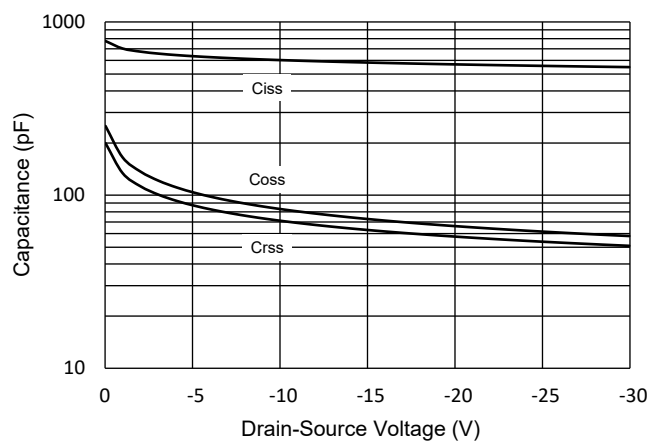
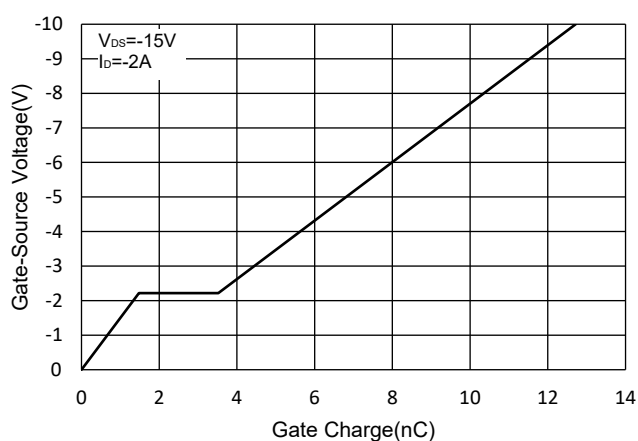


Fig.6 Gate Charge



Curve Characteristics

Fig.7 Normalized Threshold Voltage

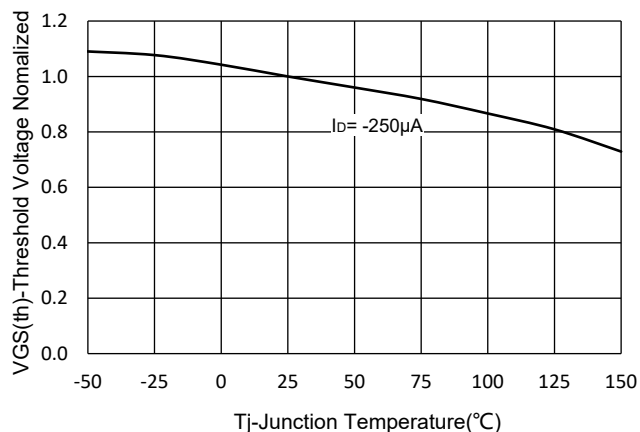


Fig.8 Normalized On Resistance Characteristics

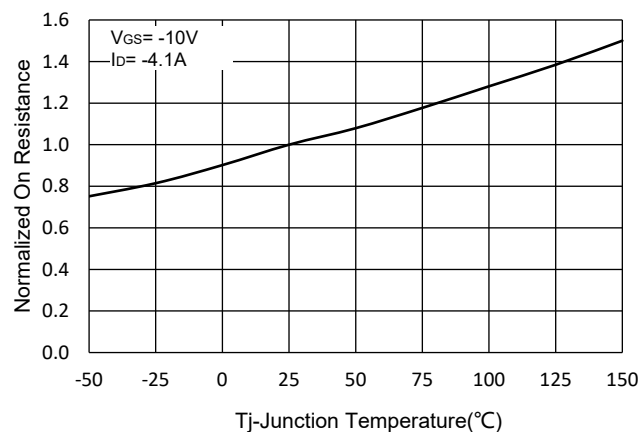


Fig.9 IS-VSD

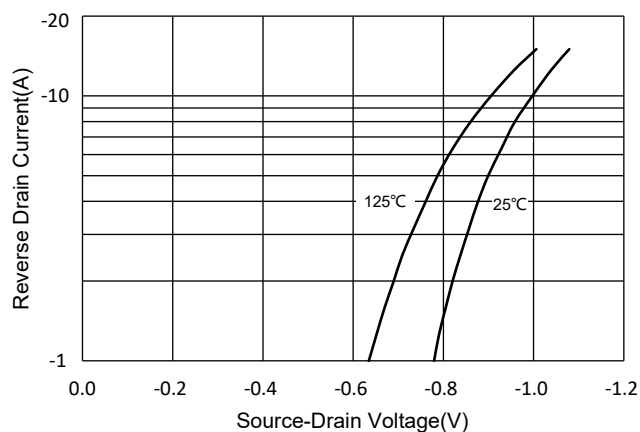


Fig.10 Drain Current

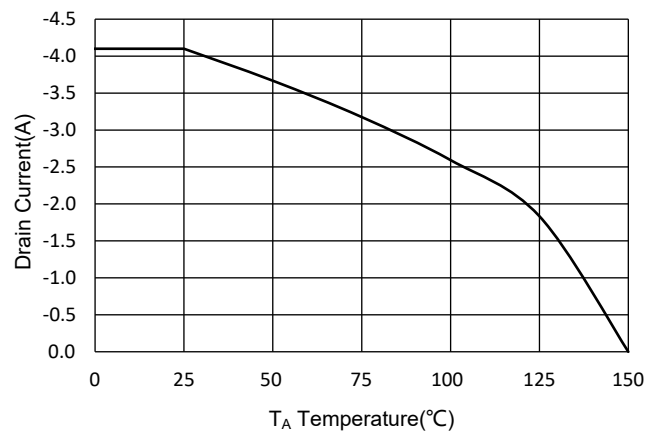
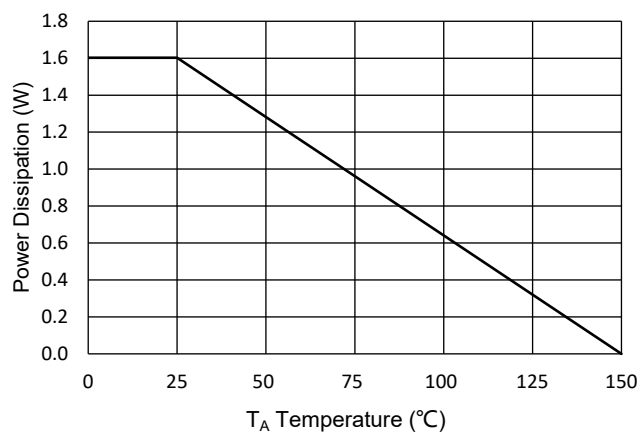


Fig.11 PD Dissipation



Curve Characteristics

Fig.12 Safe Operation Area

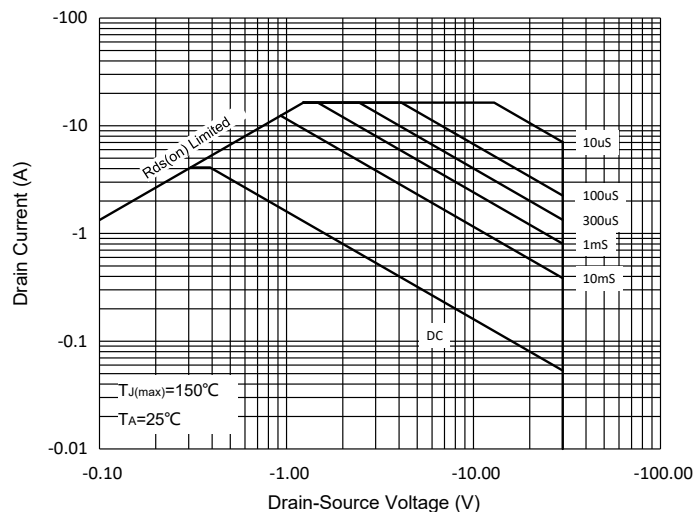
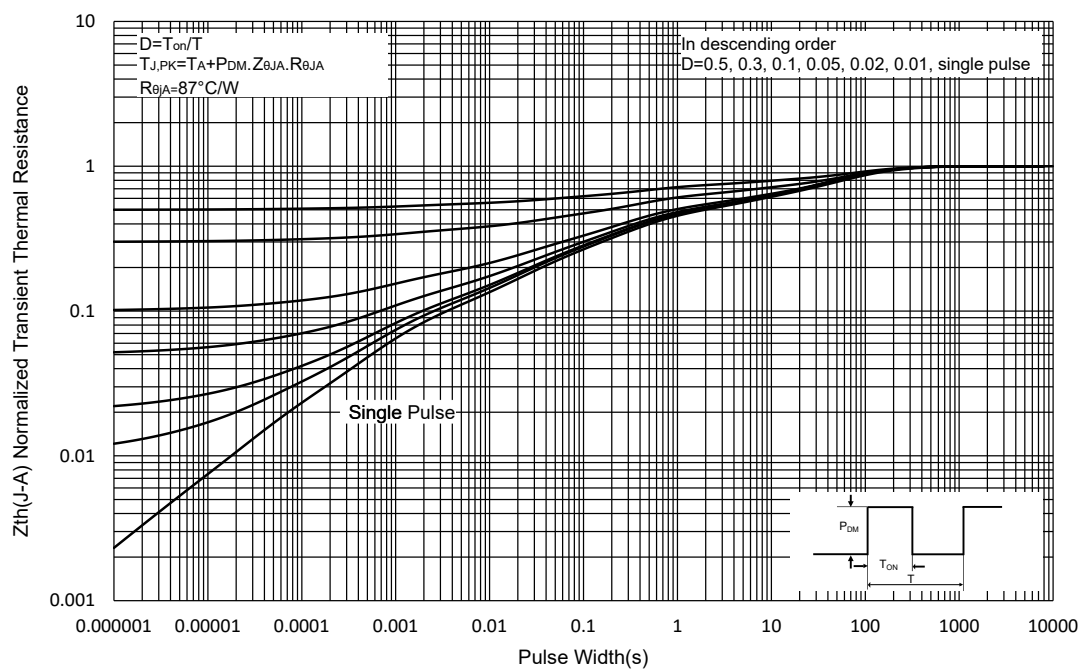


Fig.13 Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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