

Features

- Trench 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

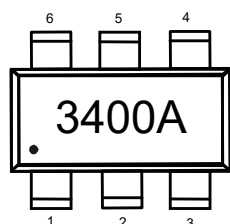
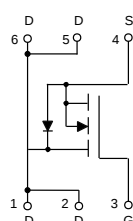
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 70°C/W Junction to Ambient (Note2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5.8	A
		3.7	
Pulsed Drain Current (Note3)	I_{DM}	23.2	A
Total Power Dissipation (Note4)	P_D	1.8	W

Note:

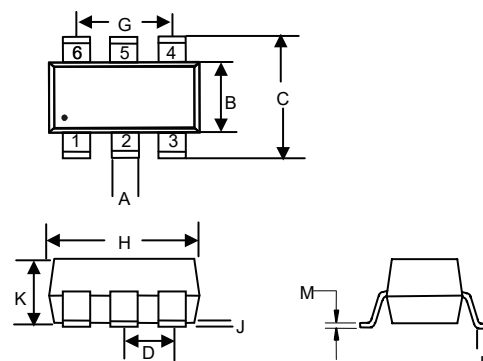
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.
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



N-CHANNEL MOSFET

SOT23-6L



DIMENSIONS					
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	2.20	3.20	
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-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±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	0.5	0.9	1.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		20	32	mΩ
		V _{GS} =4.5V, I _D =5A		21.5	38	
		V _{GS} =2.5V, I _D =4A		26	45	
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =5A		20		S
Gate Resistance	R _g	f=1 MHz, Open drain		12		Ω
Diode Characteristics						
Diode Forward Current	I _S				5.8	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _s =5.6A			1.2	V
Reverse Recovery Time	t _{rr}	I _F =5.6A,di/dt=100A/us		10		nS
Reverse Recovery Charge	Q _{rr}			3.7		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V, f=1MHz		580		pF
Output Capacitance	C _{oss}			60		
Reverse Transfer Capacitance	C _{rss}			50		
Total Gate Charge	Q _g	V _{DS} =15V,V _{GS} =10V,I _D =5.6A		16.3		nC
Gate-Source Charge	Q _{gs}			2.2		
Gate-Drain Charge	Q _{gd}			2.1		
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V,V _{GS} =10V , I _D =5.6A,R _G =3Ω		5.5		ns
Turn-on Rise Time	t _r			28.3		
Turn-off Delay Time	t _{d(off)}			24.8		
Turn-off Fall Time	t _f			13.7		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

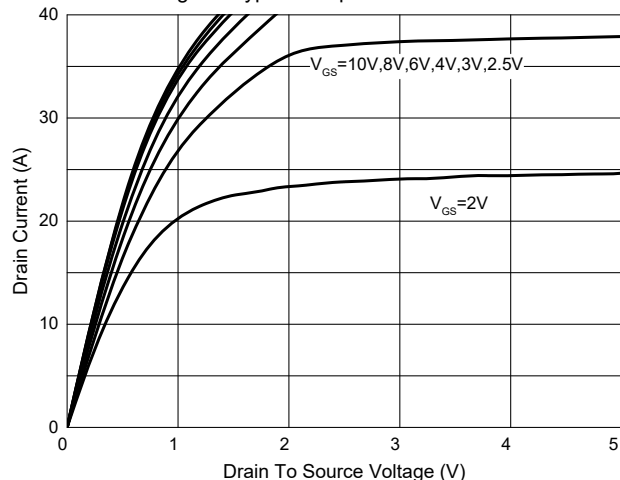


Fig. 2 - Transfer Characteristics

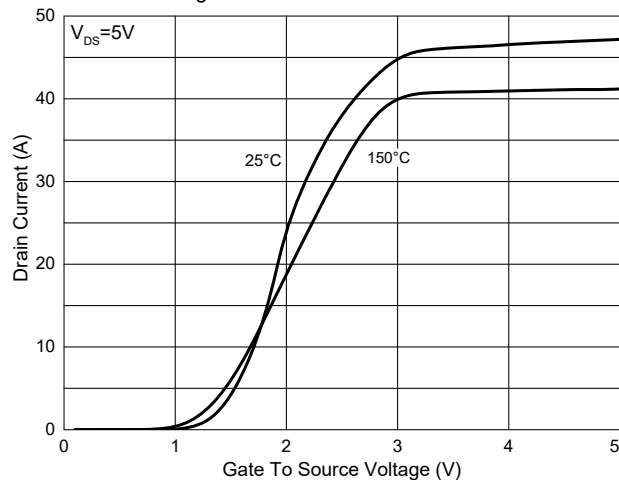


Fig. 3 - $R_{DS(ON)} - V_{GS}$

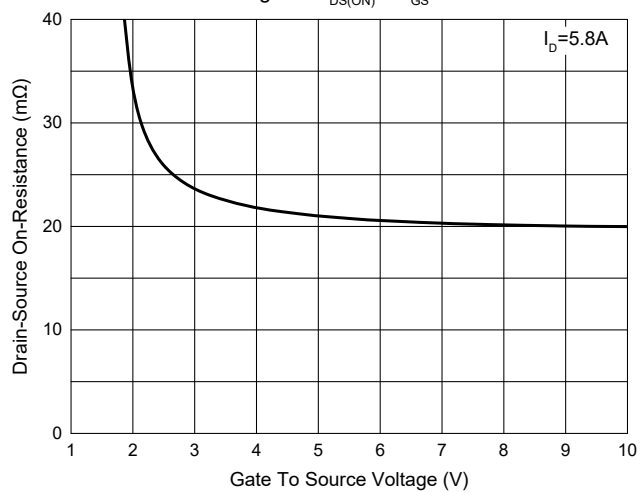


Fig. 4 - $R_{DS(ON)} - I_D$

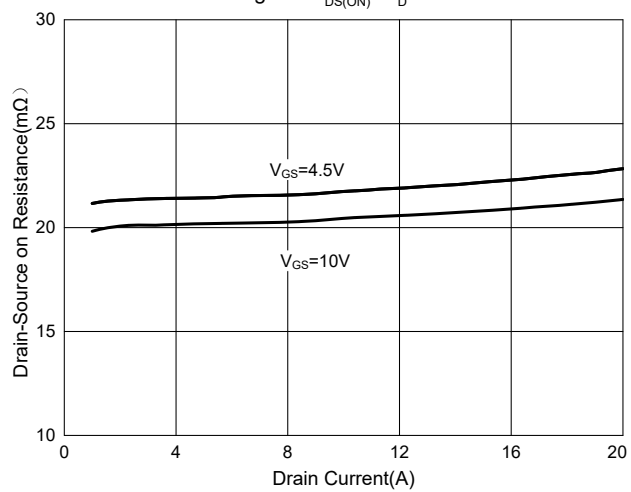


Fig. 5 - Capacitance Characteristics

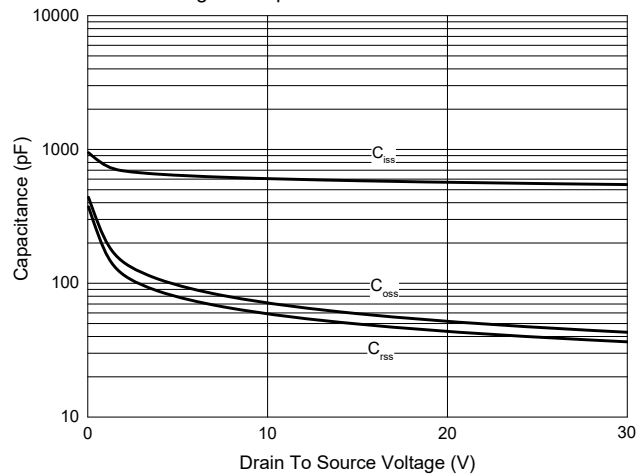
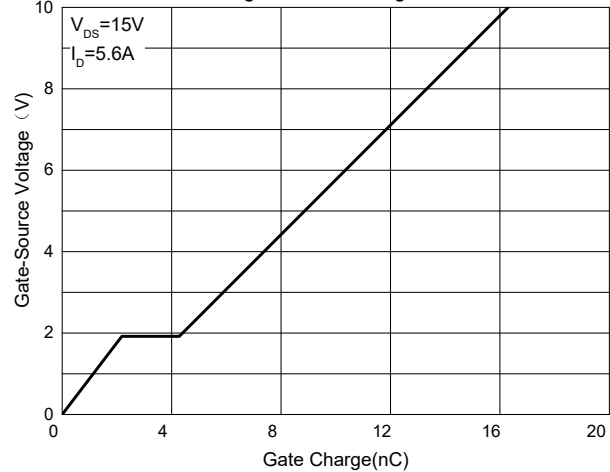


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

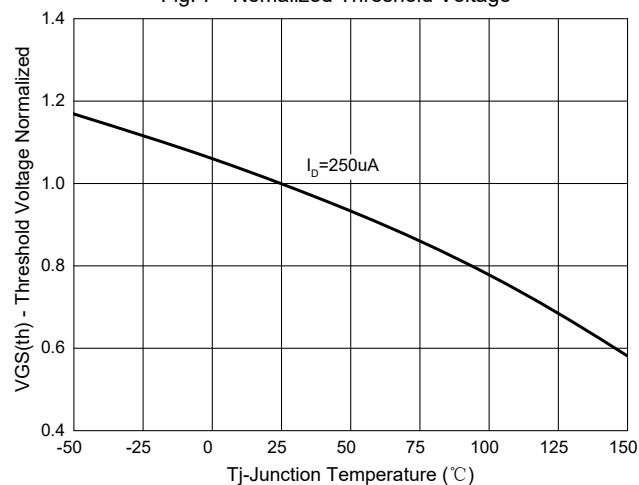


Fig.8-Normalized On Resistance Characteristics

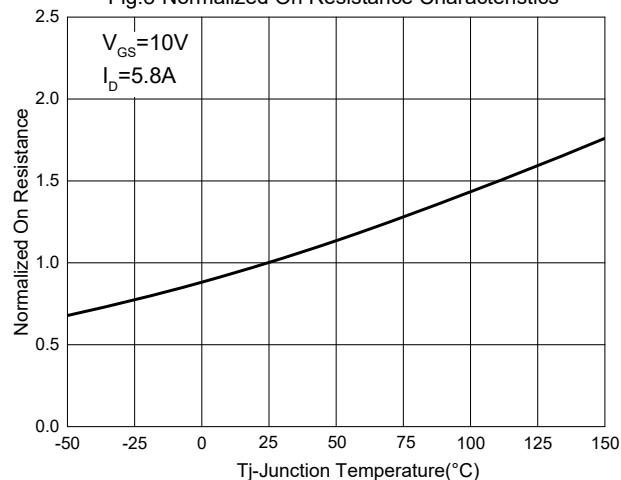


Fig.9 - $I_S - V_{SD}$

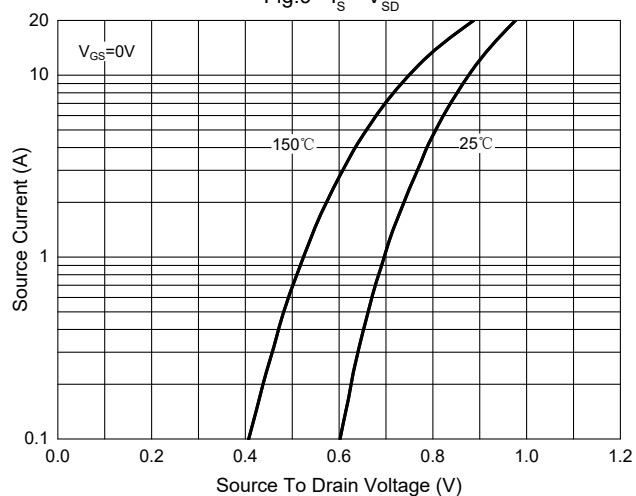


Fig. 10 - Drain Current

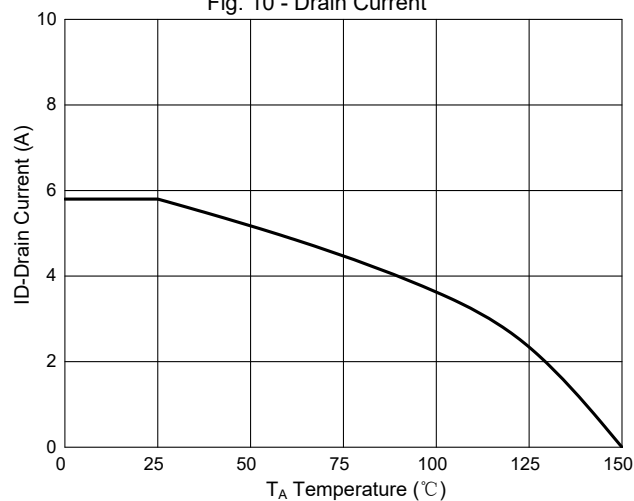
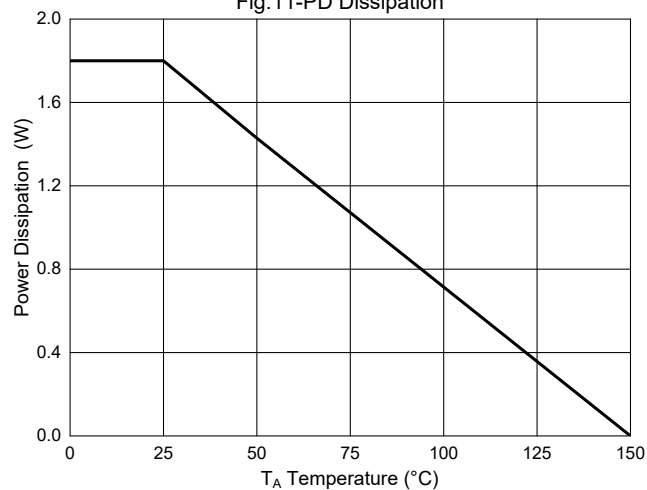


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

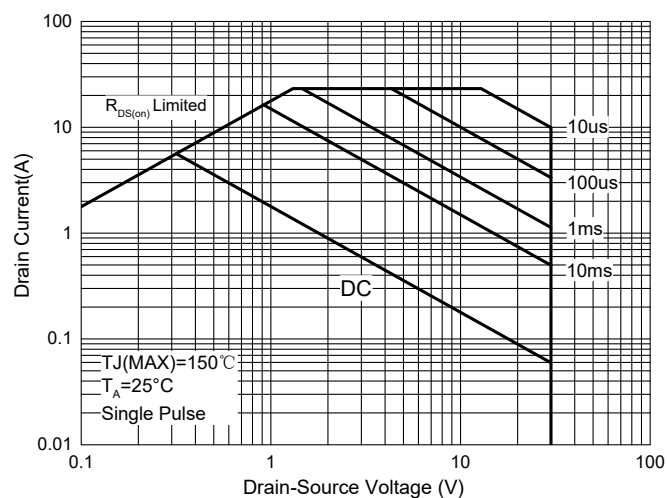
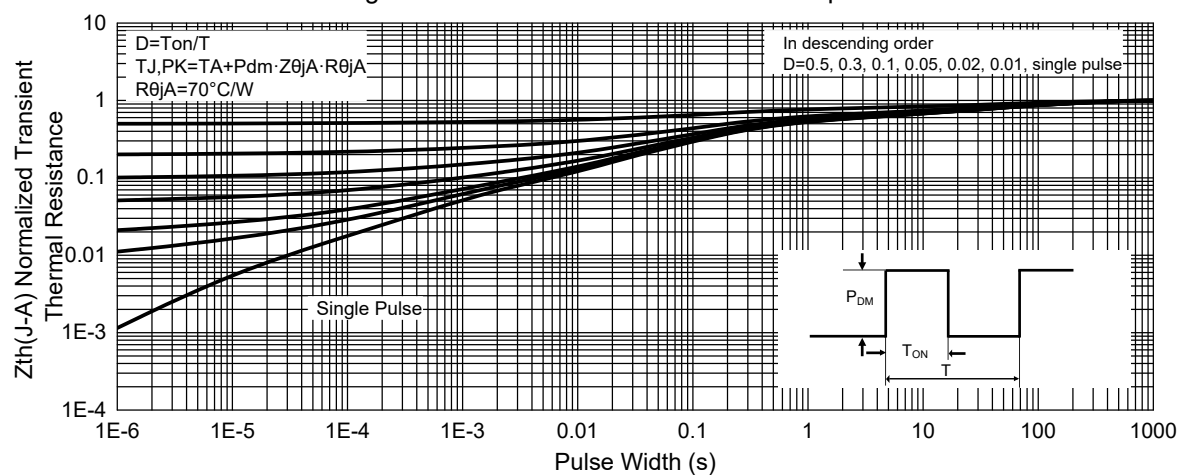


Fig. 13 -Normalized Transient Thermal Impedance



Ordering Information

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

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