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)

Dual N-Channel MOSFET

Maximum Ratings

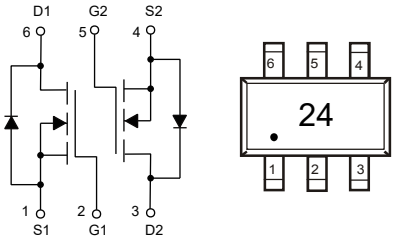
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 290°C/W Junction to Ambient(Note2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Volltage		V_{GS}	±10	V
Continuous Drain Current	T_A=25°C	I_D	1.5	A
	T_A=100°C		0.95	
Pulsed Drain Current(Note3)		I_{DM}	6	A
Total Power Dissipation(Note4)		P_D	0.43	W

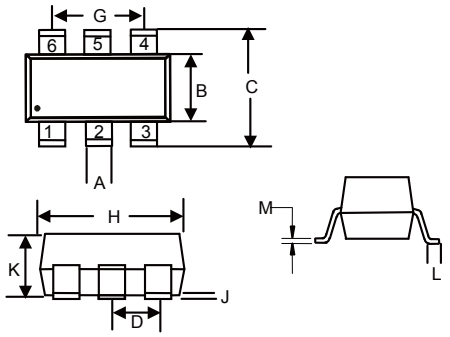
Note:

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 1 in^2 FR-4 board with 2 oz copper, in a still air environment with T_A =25°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

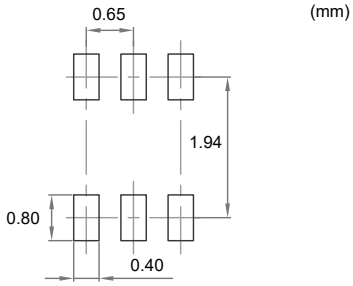


SOT-363



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.014	0.15	0.35	
B	0.045	0.053	1.15	1.35	
C	0.079	0.096	2.00	2.45	
D	0.026		0.65		TYP.
G	0.047	0.055	1.20	1.40	
H	0.071	0.087	1.80	2.20	
J	-----	0.004	-----	0.10	
K	0.031	0.043	0.80	1.10	
L	0.010	0.018	0.26	0.46	
M	0.003	0.006	0.08	0.15	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25℃ 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	20			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.55	0.75	1.1	V
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±10V, V_{DS}=0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V, I_D=1A		75	90	mΩ
		V_{GS}=2.5V, I_D=0.6A		86	105	
		V_{GS}=1.8V, I_D=0.3A		110	135	
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=1.5A		7.5		S
Gate Resistance	R_g	f=1 MHz, Open drain		1.8		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				1.5	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1A			1.2	V
Reverse Recovery Time	t_{rr}	I_F=1.5A, dI_F/dt=100A/μs		9		ns
Reverse Recovery Charge	Q_{rr}			2		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V,f=1MHz		188		pF
Output Capacitance	C_{oss}			35		
Reverse Transfer Capacitance	C_{rss}			29		
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V,I_D=1.5A		2.7		nC
Gate-Source Charge	Q_{gs}			0.3		
Gate-Drain Charge	Q_{gd}			0.5		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=10V,V_{GS}=4.5V, R_G=3Ω, I_D=1.5A		4		ns
Turn-On Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			10		
Turn-Off Fall Time	t_f			2		

Curve Characteristics

Fig.1 - Typical Output Characteristics

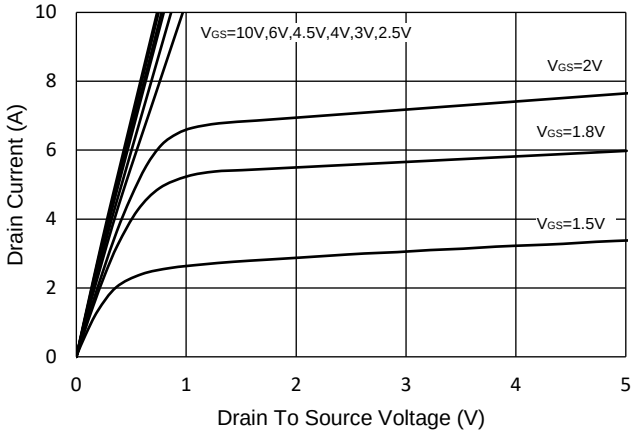


Fig.2 - Transfer Characteristic

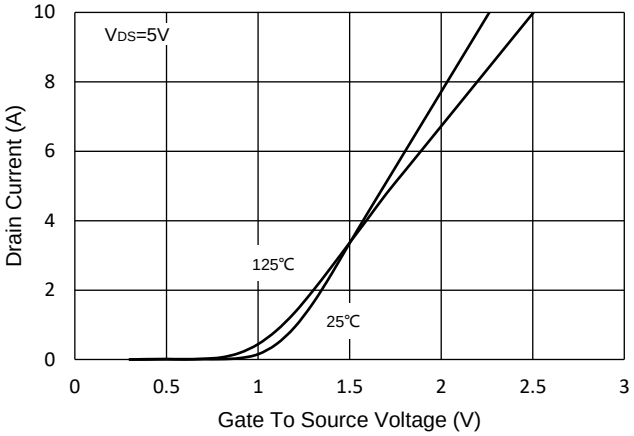


Fig.3 - $R_{DS(ON)}$ - V_{GS}

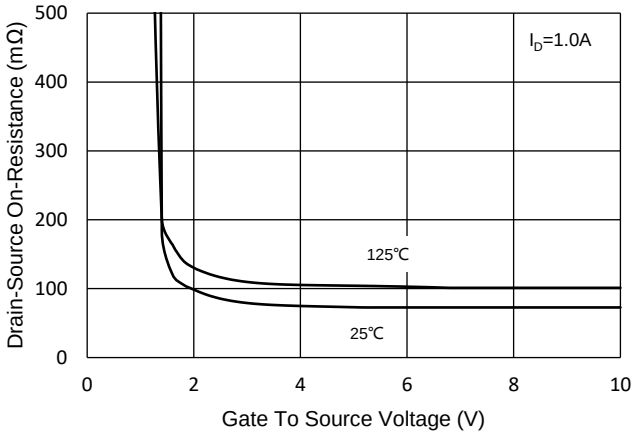


Fig.4 - $R_{DS(ON)}$ - I_D

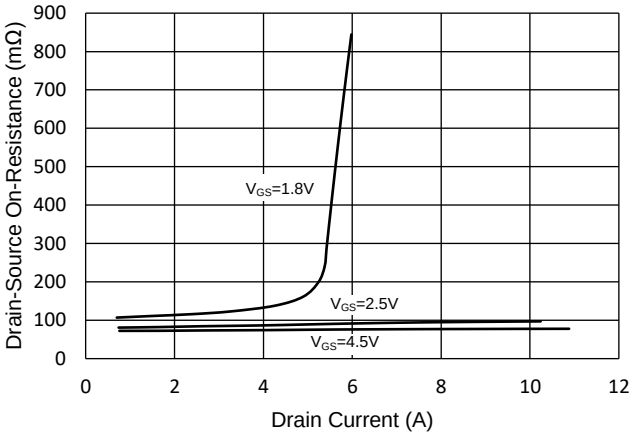


Fig.5 - Capacitance Characteristics

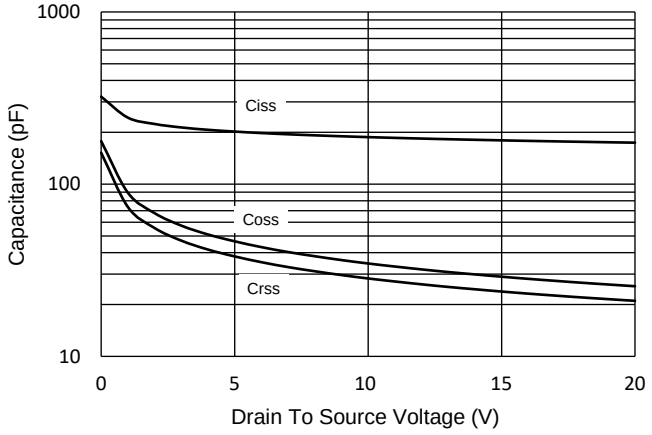
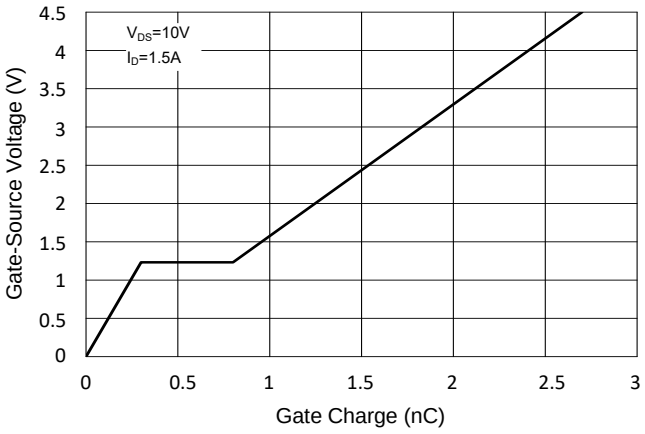


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

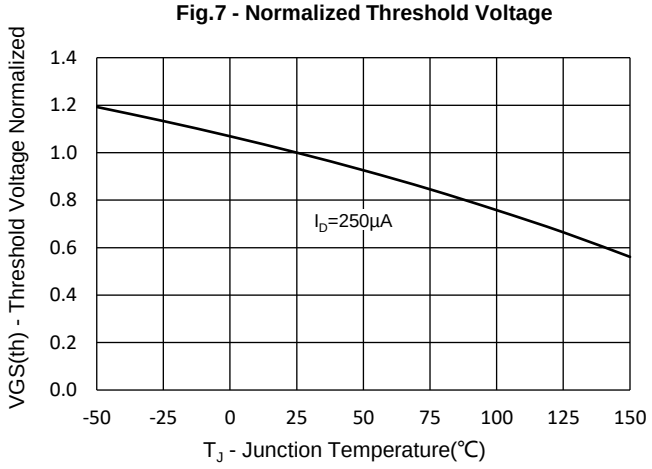


Fig.8 - Normalized On Resistance Characteristics

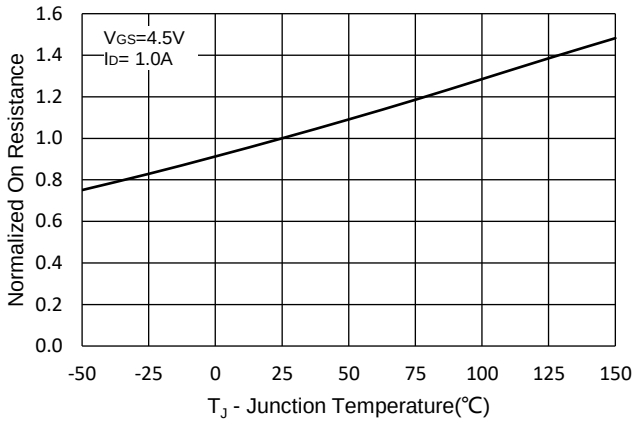


Fig.9 - I_S - V_{SD}

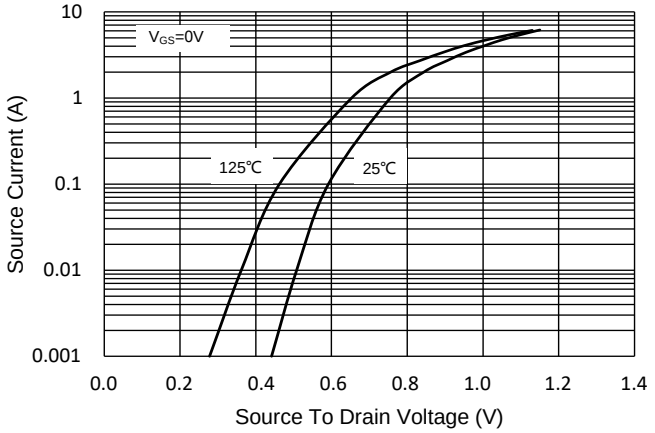


Fig.10 - Drain Current

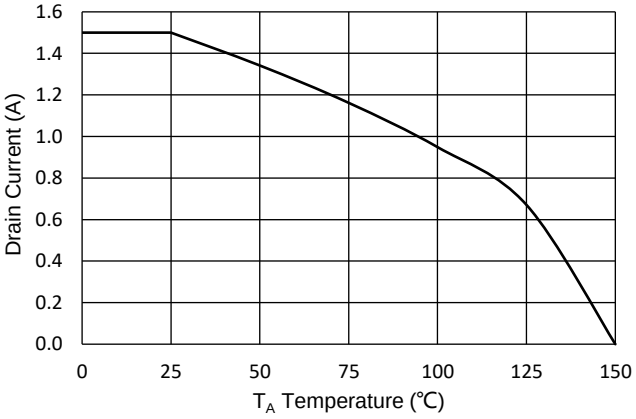
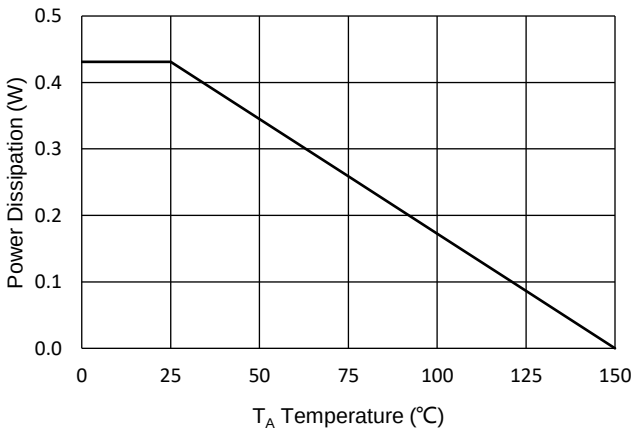


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

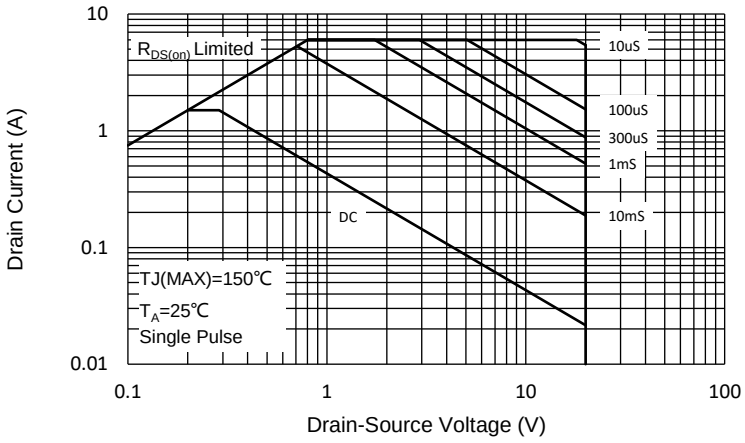
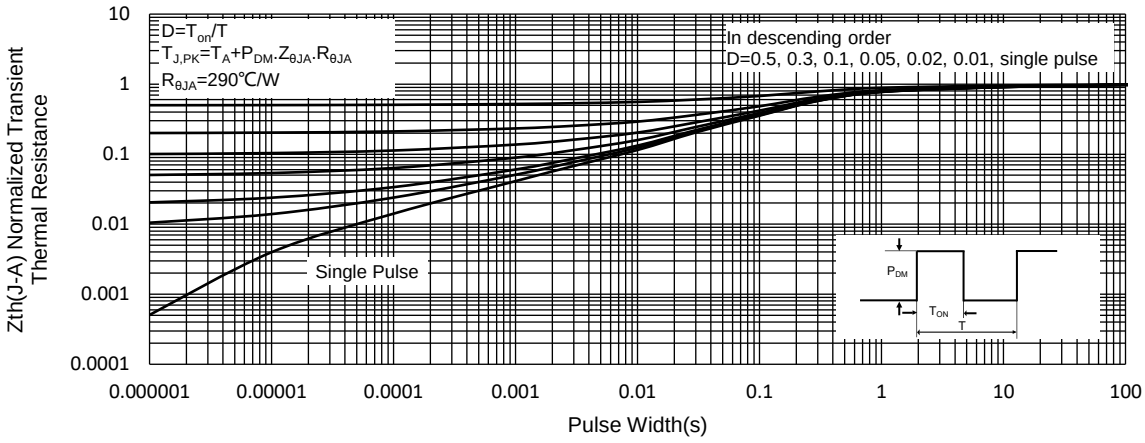


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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