Features

- Trench LV MOSFET Technology
- ESD Protected Up To 2KV(HBM)
- 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)

N-Channel MOSFET

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 300°C/W Junction to Ambient(Note 2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	V
Drain Current-Continuous	T_A=25°C	I_D	0.75	A
	T_A=100°C		0.47	
Pulsed Drain Current(Note 3)		I_{DM}	3	A
Power Dissipation(Note 4)		P_D	0.42	W

Note:

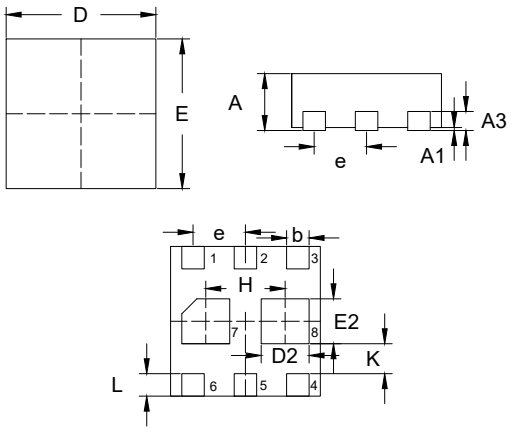
1.Halogen free "Green” products are defined as those which contain <900ppm bromine,< 900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

3. Repetitive rating; pulse width limited by max. junction temperature.

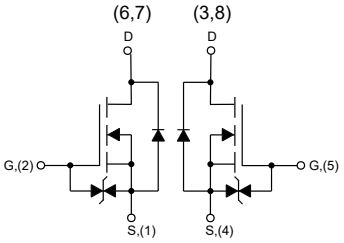
4. P_D is based on max. junction temperature, using junction-ambient thermal resistance.

DFN1010B-6

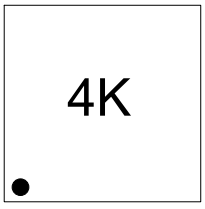


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.012	0.016	0.31	0.40	
A1	0.000	0.002	0.00	0.05	
A3	0.005		0.127		TYP.
b	0.004	0.008	0.10	0.20	
D	0.037	0.041	0.95	1.05	
E	0.037	0.041	0.95	1.05	
e	0.014		0.350		TYP.
D2	0.011	0.015	0.27	0.37	
E2	0.010	0.014	0.25	0.35	
H	0.021		0.530		TYP.
L	0.004	0.008	0.10	0.20	
K	0.008	-	0.20	-	

Internal Structure and Marking Code



1,4. Source
2,5.Gate
3,6,7,8. Drain



PIN1

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	0.35	0.7	1.2	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =20V, V_{GS} =0V			1.0	μA
Gate-body Leakage Current	I_{GSS}	V_{GS} =± 10V, V_{DS} =0V			±10	μA
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V, I_D=0.5A		173	250	mΩ
		V_{GS}=2.5V, I_D=0.4A		250	340	
		V_{GS}=1.8V, I_D=0.2A		405	950	
Gate Resistance	R_g	f=1 MHz, Open drain		44		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				0.75	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=0.5A			1.2	V
Reverse Recovery Time	t_{rr}	I_F=0.1A, dI_F/dt=100A/μs		5.5		ns
Reverse Recovery Charge	Q_{rr}			0.8		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=16V,V_{GS}=0V, f=1MHz		33		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			5.6		
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V,I_D=0.1A		1.2		nC
Gate-Source Charge	Q_{gs}			0.2		
Gate-Drain Charge	Q_{gd}			0.2		
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V,V_{GS}=4.5V I_D=0.5A, R_G=10Ω		5.4		ns
Turn-on Rise Time	t_r			5.2		
Turn-off Delay Time	$t_{d(off)}$			10.5		
Turn-off Fall Time	t_f			5.7		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

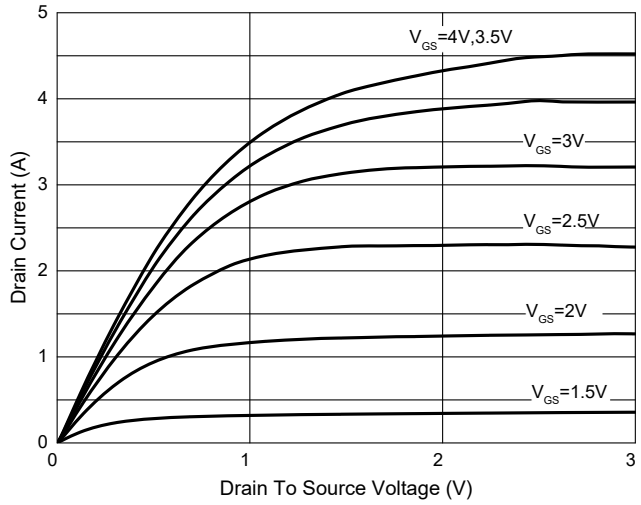


Fig. 2 - Transfer Characteristics

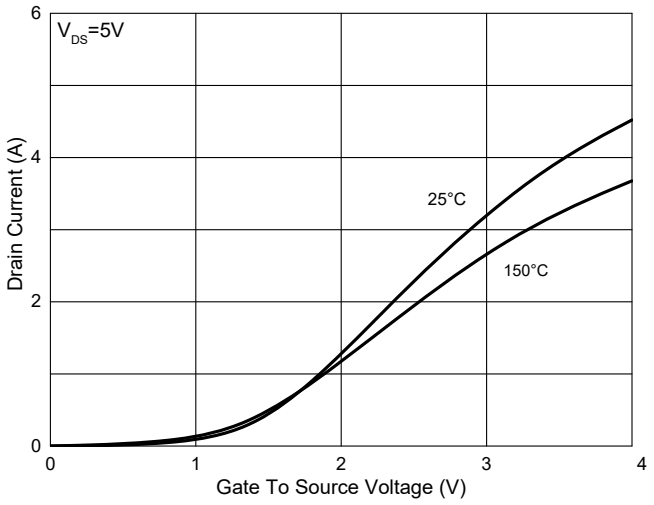


Fig. 3 - $R_{DS(ON)}$—V_{GS}

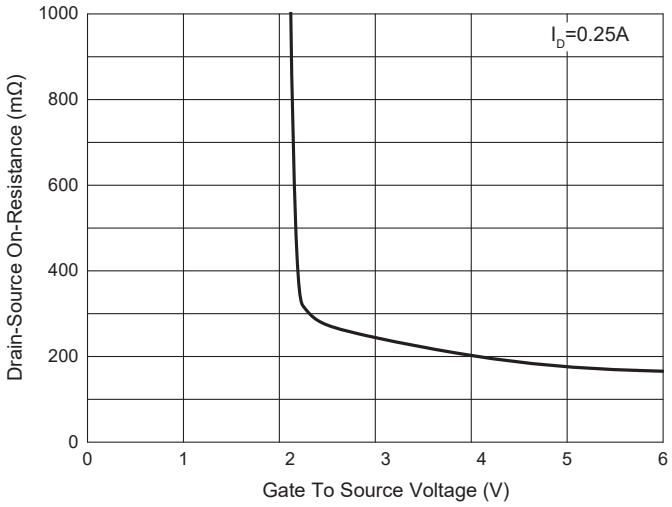


Fig. 4 - $R_{DS(ON)}$—I_D

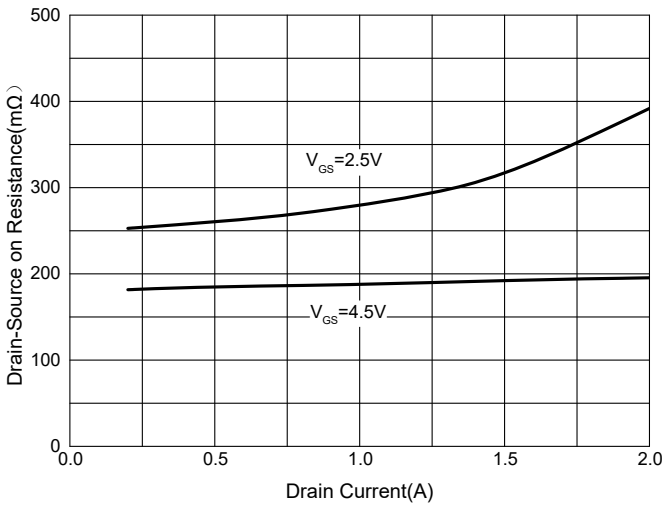


Fig. 5 - Capacitance Characteristics

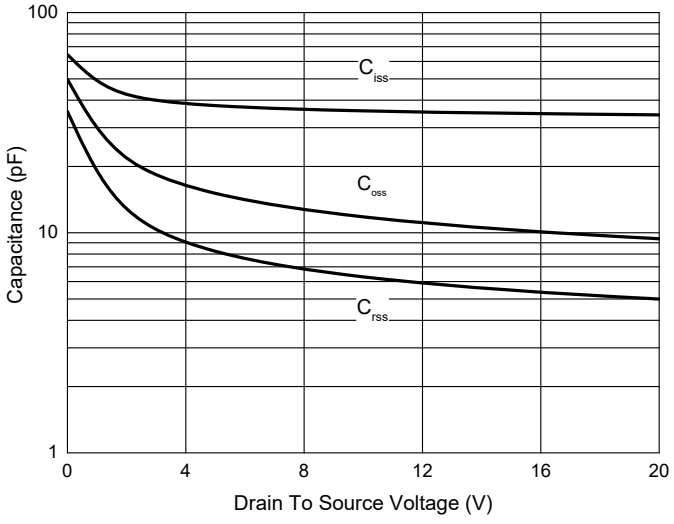
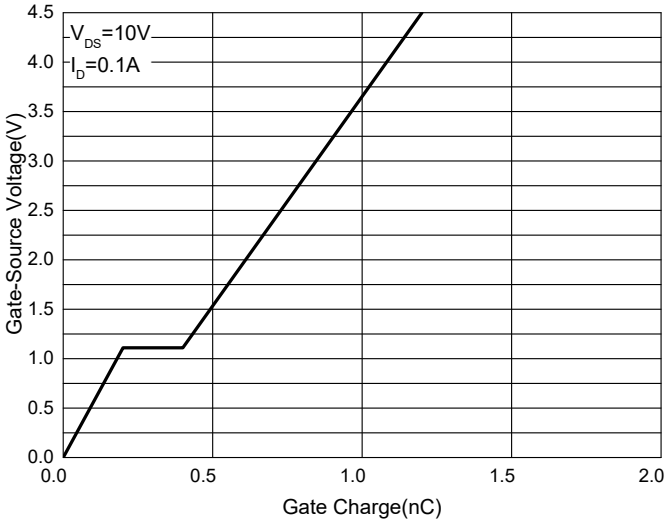


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Nomalized Threshold Voltage

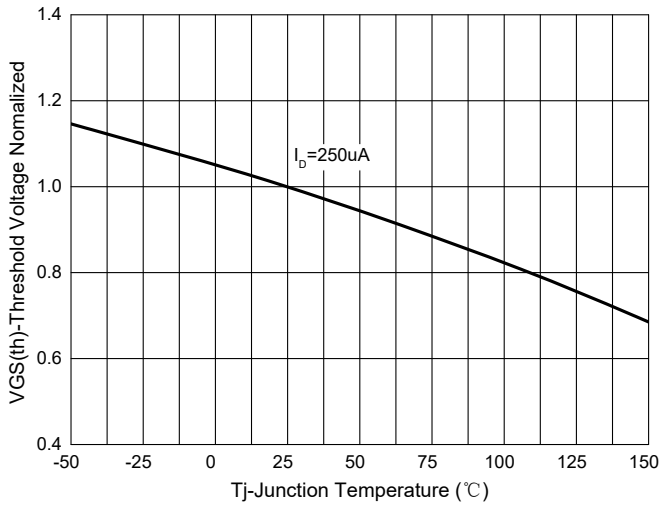


Fig.8-Normalized On Resistance Characteristics

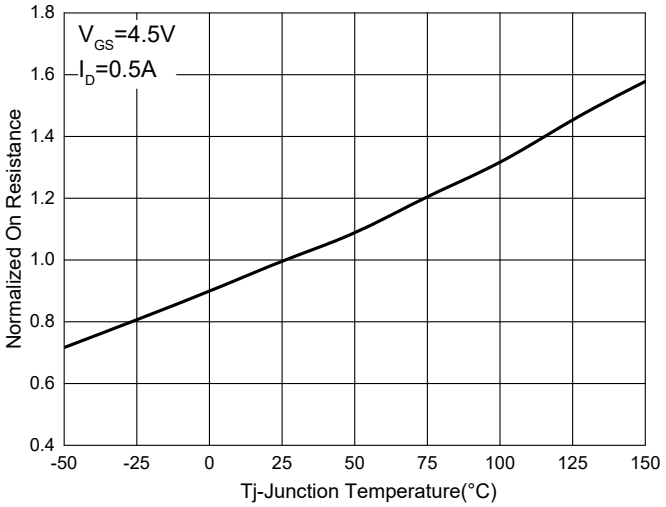


Fig.9 - I_S—V_{SD}

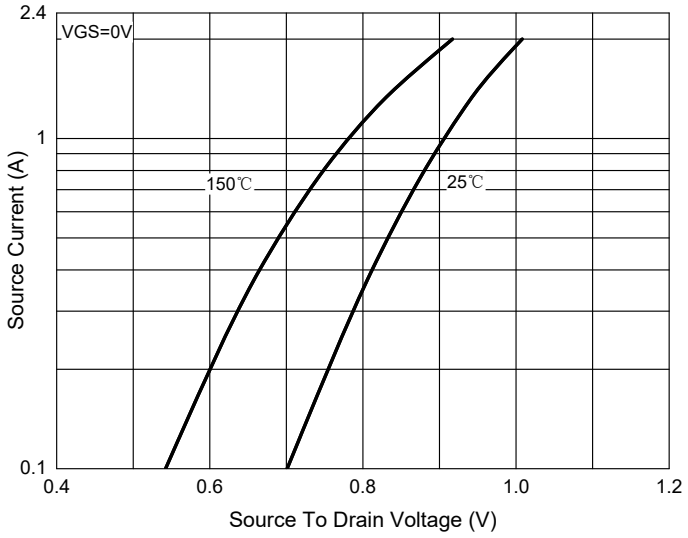


Fig. 10 - Drain Current

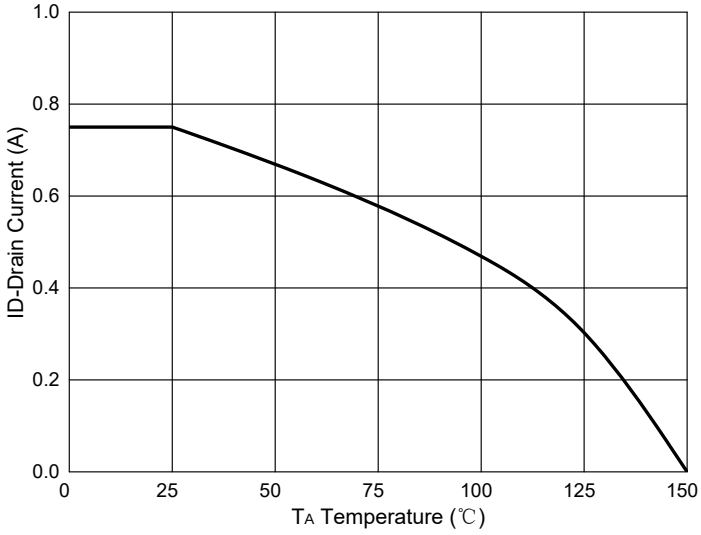
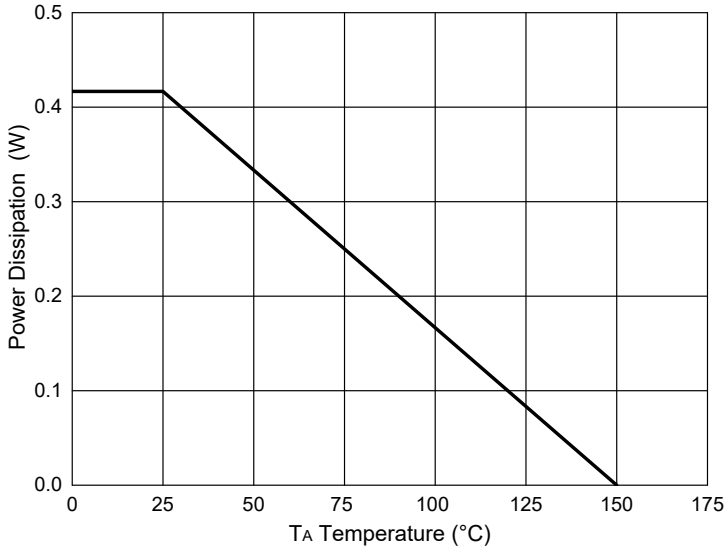


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

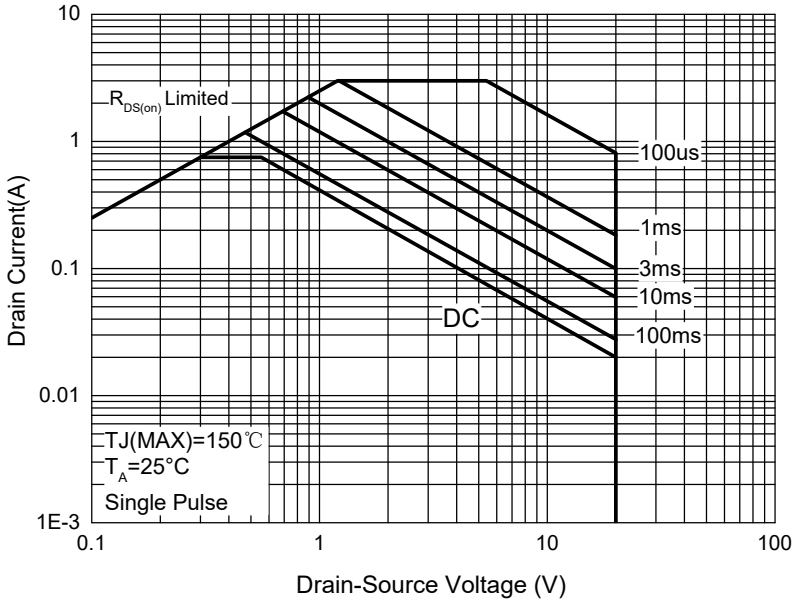
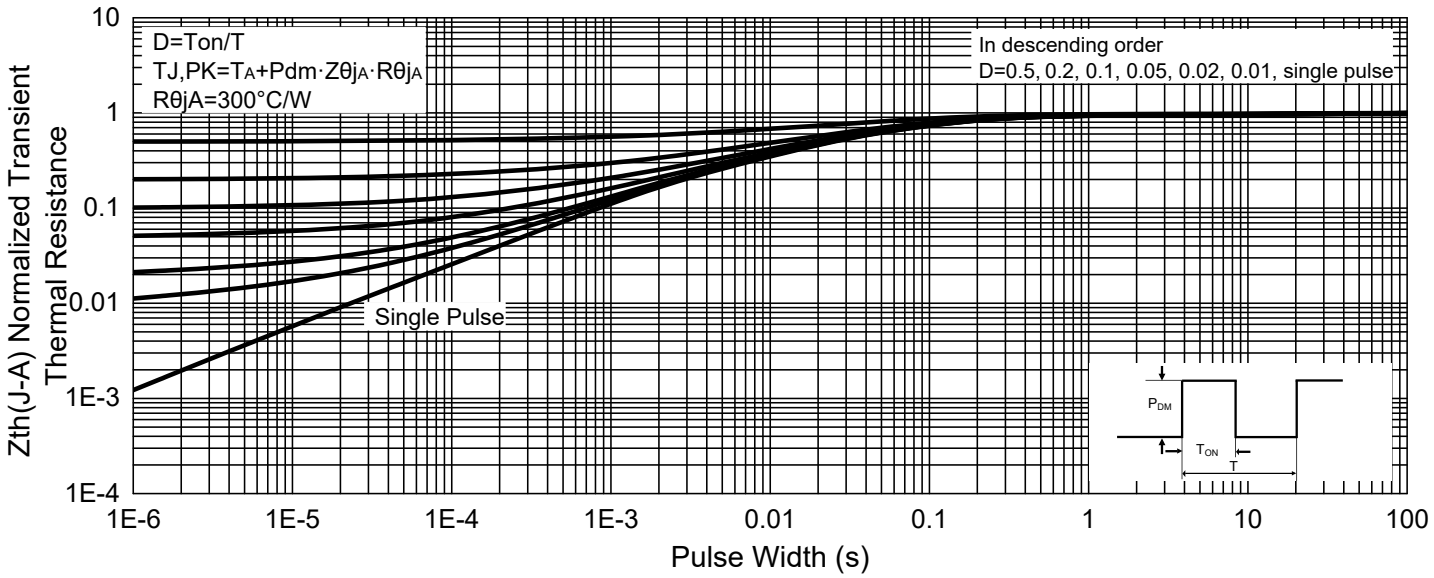


Fig. 13 -Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:5Kpcs/Reel

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