

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)

Maximum Ratings

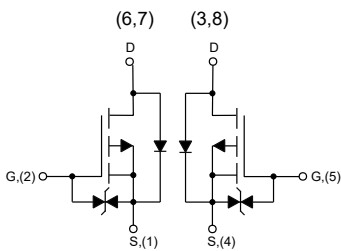
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 360°C/W Junction to Ambient (Note 2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±10	V
Drain Current-Continuous	I _D	T _A =25°C	-0.52
		T _A =100°C	-0.33
Pulsed Drain Current (Note 3)	I _{DM}	-2.08	A
Power Dissipation (Note 4)	P _D	0.35	W

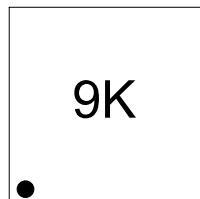
Note:

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_{θJA} is measured with the device mounted on 1in² 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.

Internal Structure and Marking Code



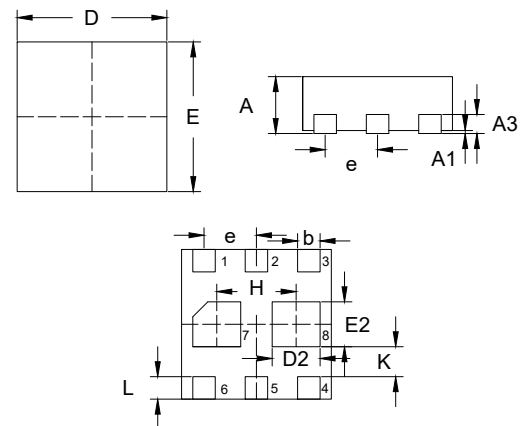
1,4. Source
2,5. Gate
3,6,7,8. Drain



PIN1

P-Channel MOSFET

DFN1010B-6



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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	-	

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 10V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35	-0.62	-1.2	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-0.5A$		580	850	m Ω
		$V_{GS}=-2.5V, I_D=-0.3A$		855	1200	
		$V_{GS}=-1.8V, I_D=-0.2A$		1350	2000	
Gate Resistance	R_g	f=1 MHz, Open drain		85		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-0.52	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-0.5A$			-1.2	V
Reverse Recovery Time	t_{rr}	$I_F=-1A, di_F/dt=20A/\mu s$		32		ns
Reverse Recovery Charge	Q_{rr}			3.1		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		36		pF
Output Capacitance	C_{oss}			12		
Reverse Transfer Capacitance	C_{rss}			6.4		
Total Gate Charge	Q_g	$V_{DD}=-10V, V_{GS}=-4.5V, I_D=-1A$		1.4		nC
Gate-Source Charge	Q_{gs}			0.4		
Gate-Drain Charge	Q_{gd}			0.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-10V, V_{GS}=-4.5V, R_G=3\Omega, I_D=-0.5A$		3.2		ns
Turn-On Rise Time	t_r			18.6		
Turn-Off Delay Time	$t_{d(off)}$			8.3		
Turn-Off Fall Time	t_f			21.4		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

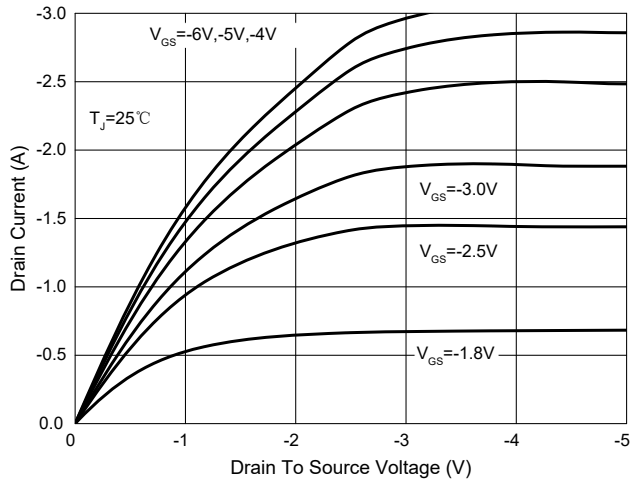


Fig. 2 - Transfer Characteristics

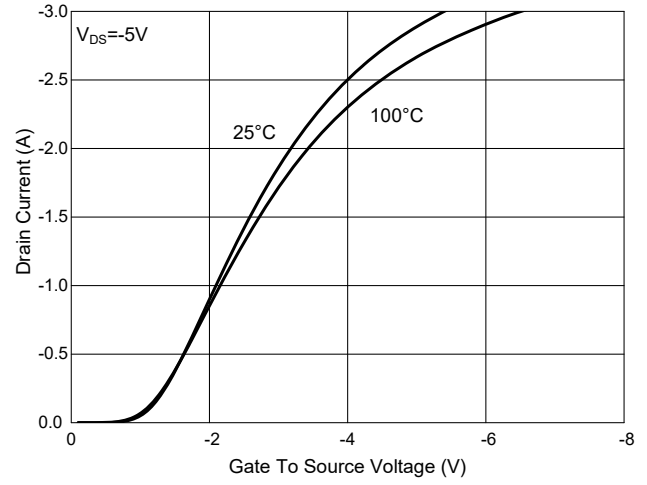


Fig. 3 - $R_{DS(ON)} - V_{GS}$

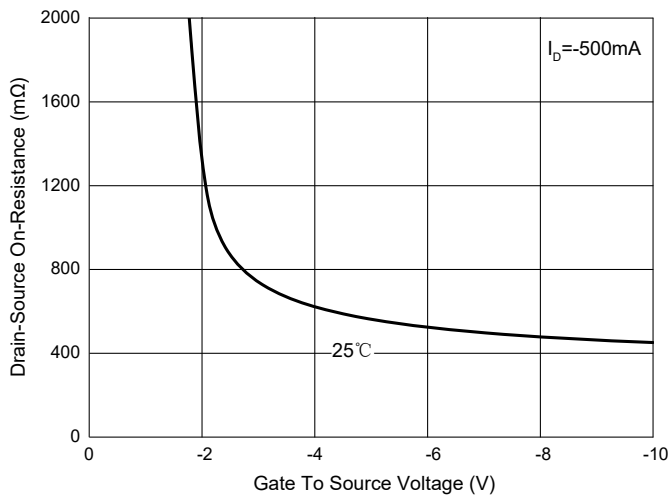


Fig. 4 - $R_{DS(ON)} - I_D$

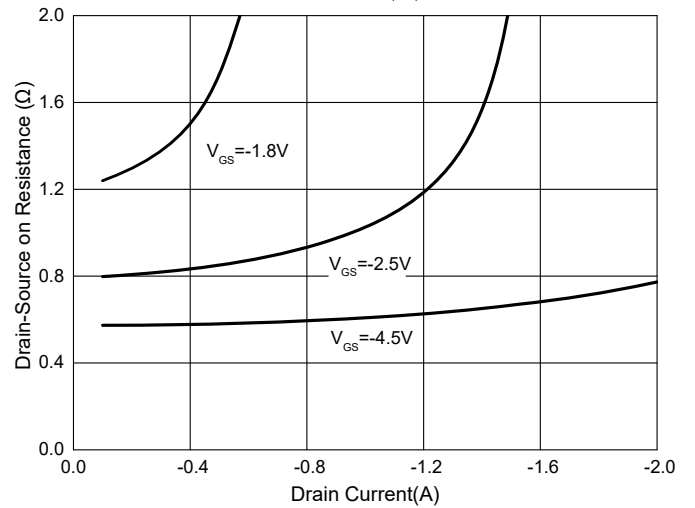


Fig. 5 - Capacitance Characteristics

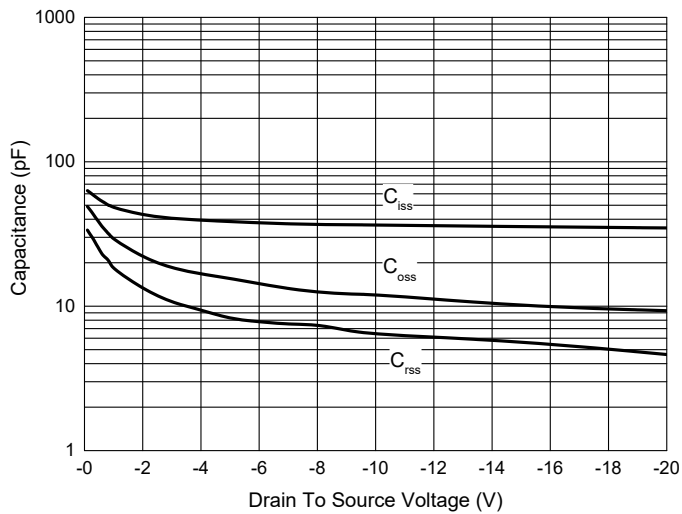
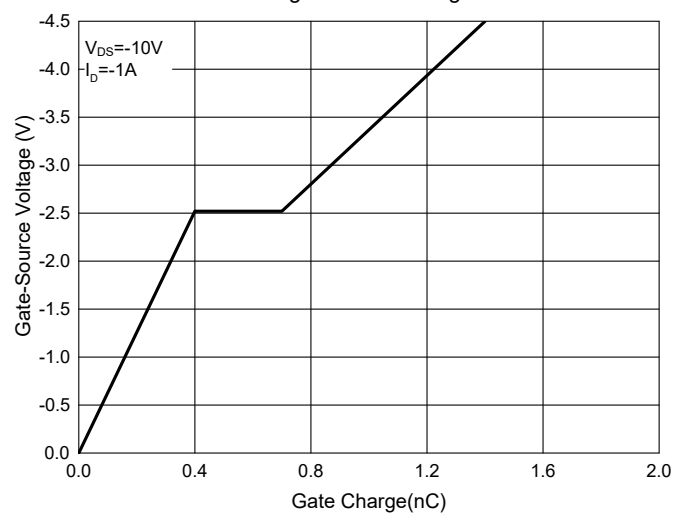


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold voltage

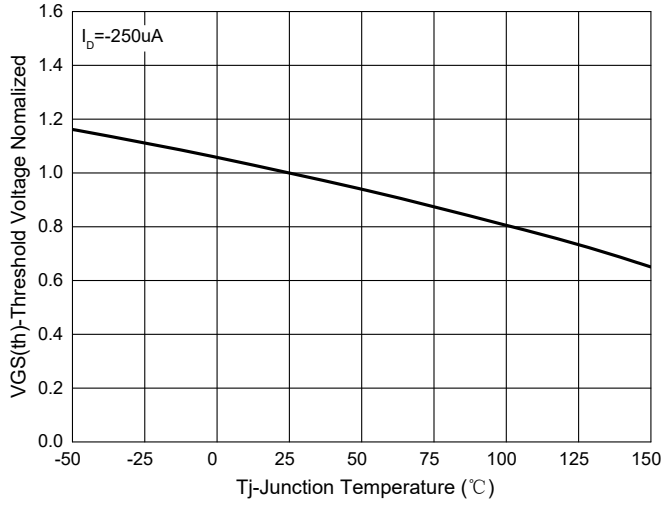


Fig. 8 - Normalized On Resistance Characteristics

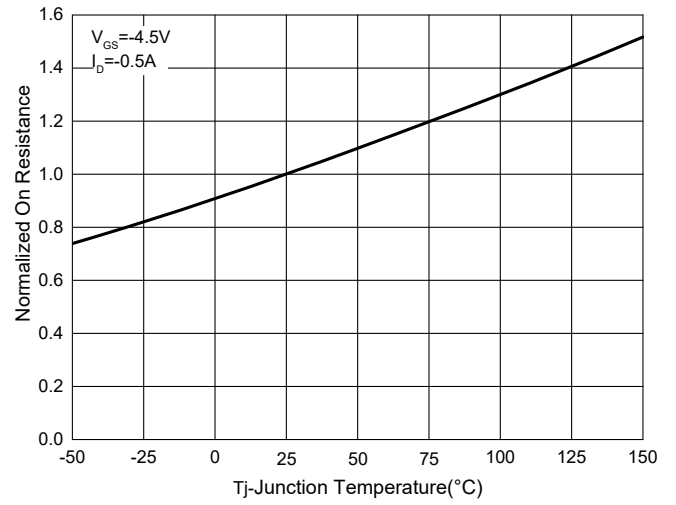


Fig. 9 - I_s—V_{SD}

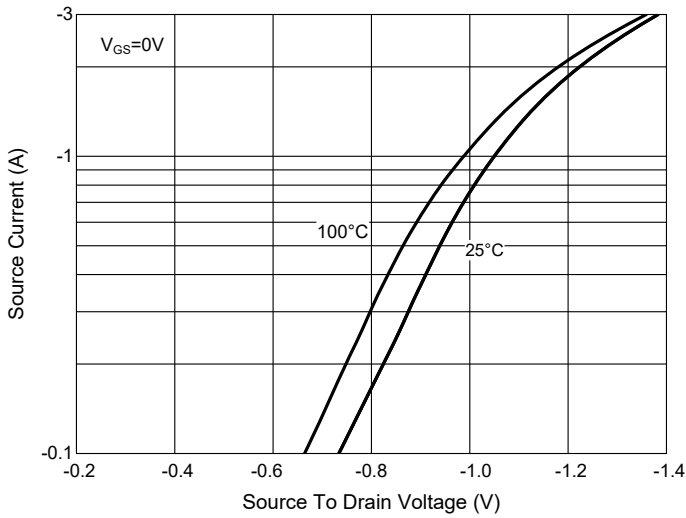


Fig.10 - Drain Current

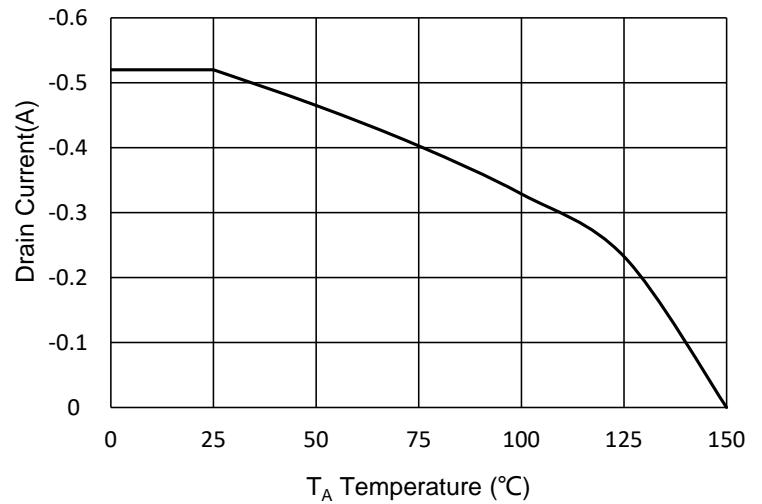
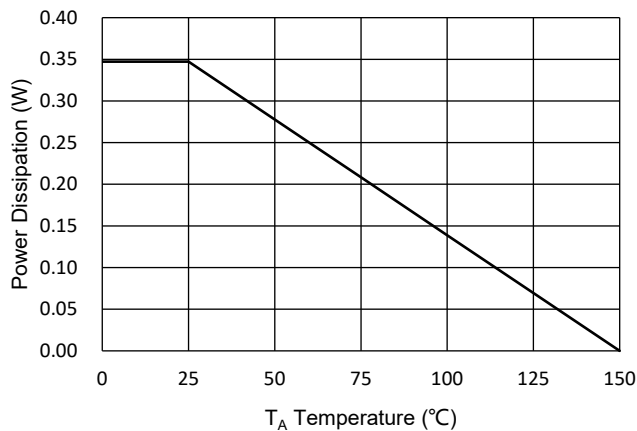


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

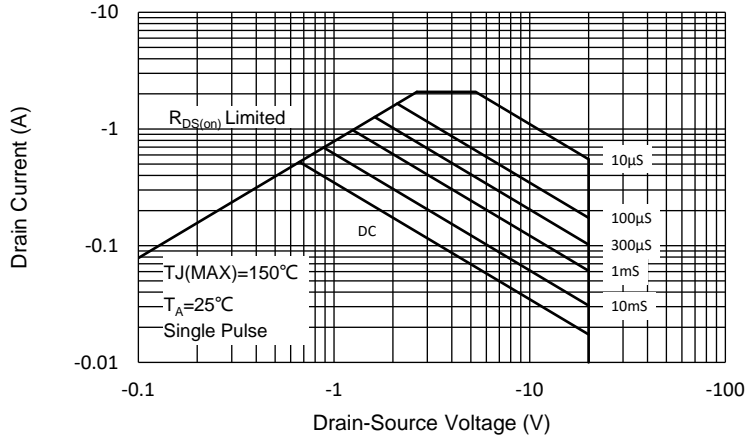
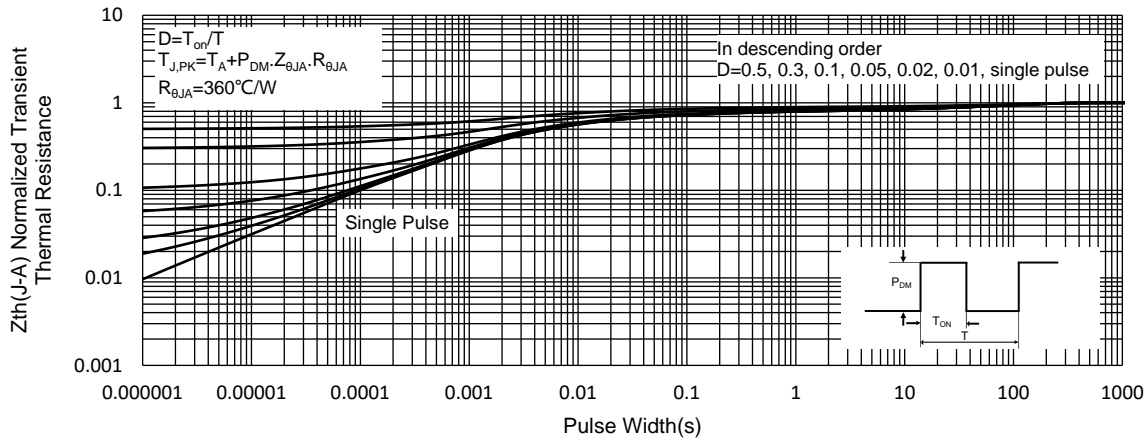


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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

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