

Features

- ESD Protected Up To 2KV (HBM)
- Fast Switching Speed
- 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

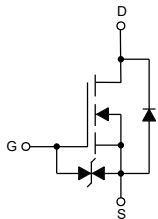
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 461 °C/W Junction to Ambient (Note 2)

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V_{DS}	30	V
Gate -Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	$T_A=25^\circ\text{C}$	0.1
		$T_A=100^\circ\text{C}$	0.06
Pulsed Drain Current (Note 3)	I_{DM}	0.4	A
Power Dissipation (Note 4)	P_D	0.27	W

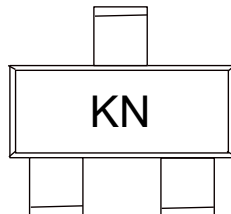
Note:

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

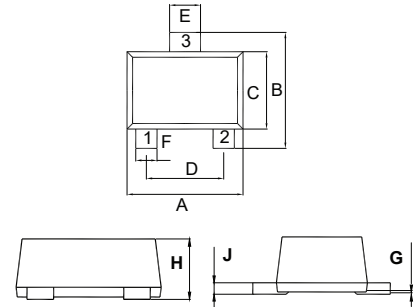


1. GATE
2. SOURCE
3. DRAIN



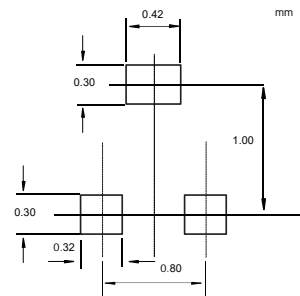
N-Channel MOSFET

SOT-723



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.043	0.051	1.10	1.30	
B	0.043	0.051	1.10	1.30	
C	0.028	0.035	0.70	0.90	
D	0.031		0.80		TYP.
E	0.009	0.017	0.22	0.42	
F	0.005	0.013	0.12	0.32	
G	0.000	0.002	0.00	0.05	
H	0.017	0.021	0.43	0.54	
J	0.003	0.006	0.08	0.15	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	30			V
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 2	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3V, I_D=100\mu A$	0.5	0.8	1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4V, I_D=10mA$		1.8	8	Ω
		$V_{GS}=2.5V, I_D=55mA$		4.0	13	
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=500mA$		350		mS
Gate Resistance	R_g	f=1 MHz, Open drain		255		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				0.1	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=100mA$			1.3	V
Reverse Recovery Time	t_{rr}	$I_F=0.3A, di_F/dt=100A/\mu s$		11		ns
Reverse Recovery Charge	Q_{rr}				3	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		16		pF
Output Capacitance	C_{oss}			5.4		
Reverse Transfer Capacitance	C_{rss}			3.3		
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=10V, I_D=0.3A$		0.78		nC
Gate-Source Charge	Q_{gs}			0.13		
Gate-Drain Charge	Q_{gd}			0.14		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15V, V_{GS}=10V, R_G=3.9\Omega, I_D=0.3A$		2.4		ns
Turn-On Rise Time	t_r			2.7		
Turn-Off Delay Time	$t_{d(off)}$			6		
Turn-Off Fall Time	t_f			10		

Curve Characteristics

Fig.1 - Typical Output Characteristics

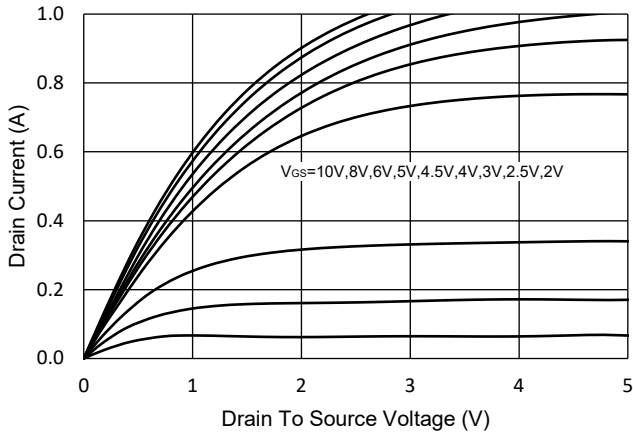


Fig.2 - Transfer Characteristic

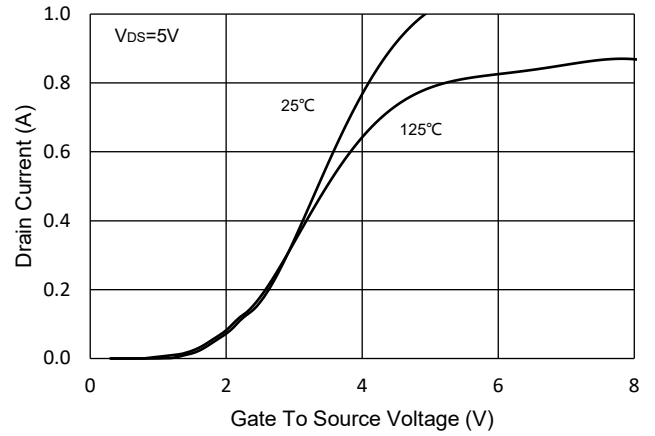


Fig.3 - $R_{DS(ON)}$ - V_{GS}

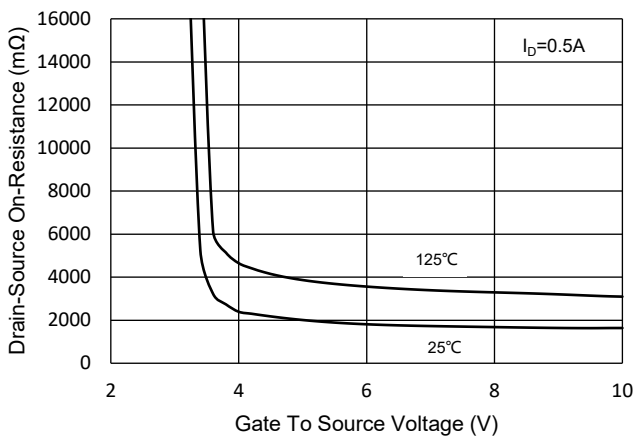


Fig.4 - $R_{DS(ON)}$ - I_D

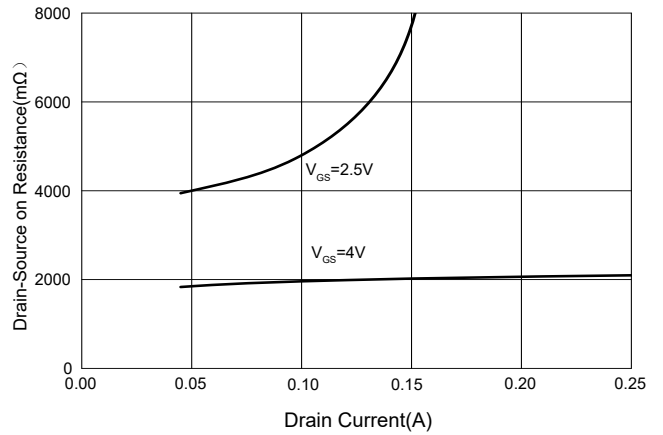


Fig.5 - Capacitance Characteristics

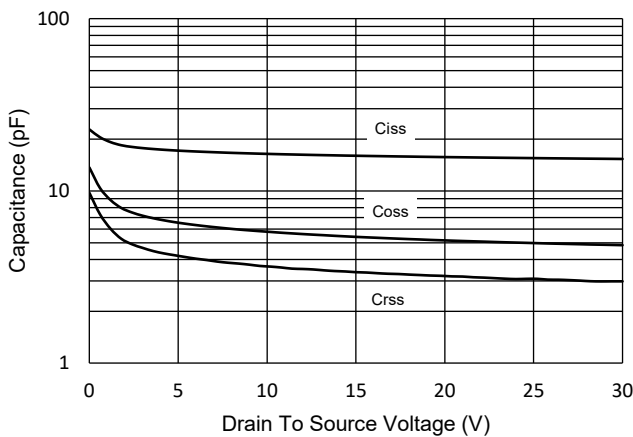
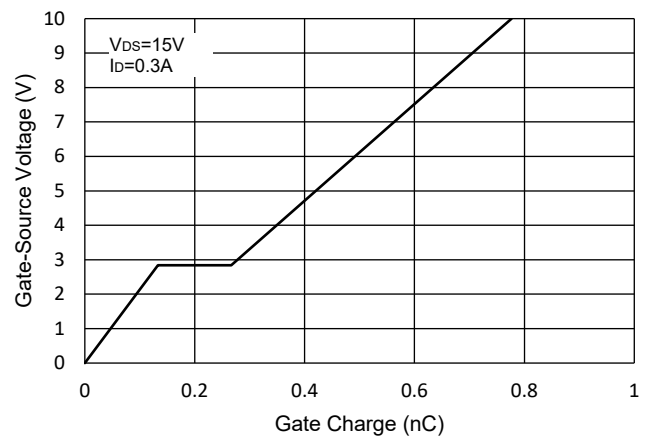


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

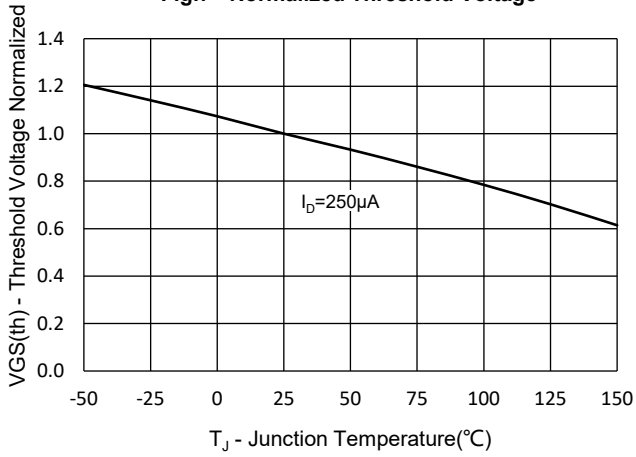


Fig.8 - Normalized On Resistance Characteristics

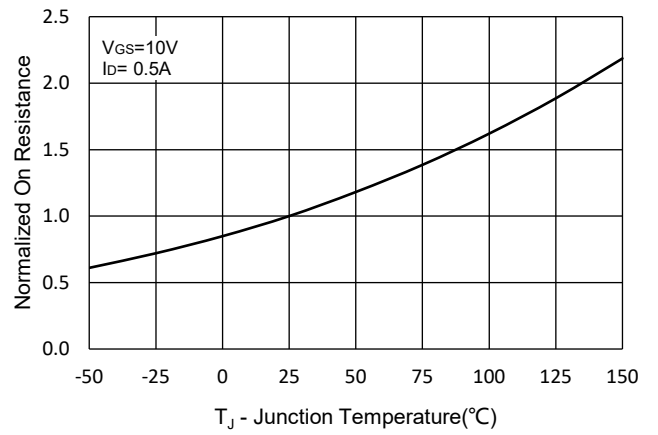


Fig.9 - I_s - V_{SD}

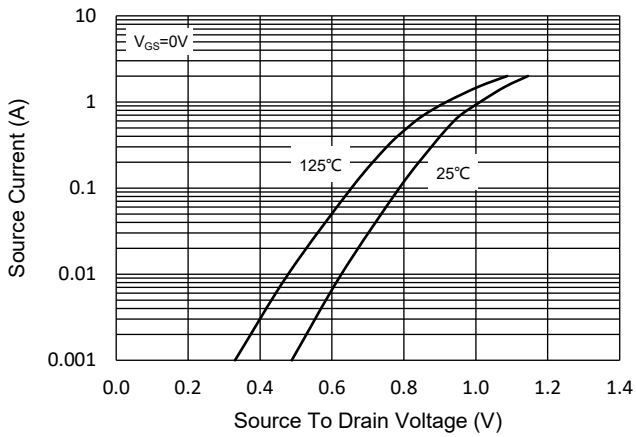


Fig. 10 - Drain Current

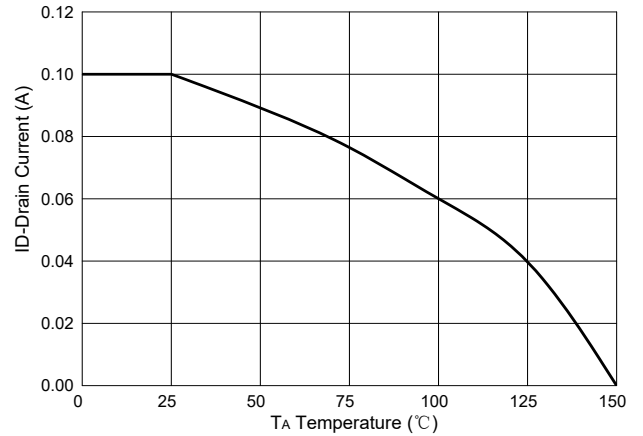
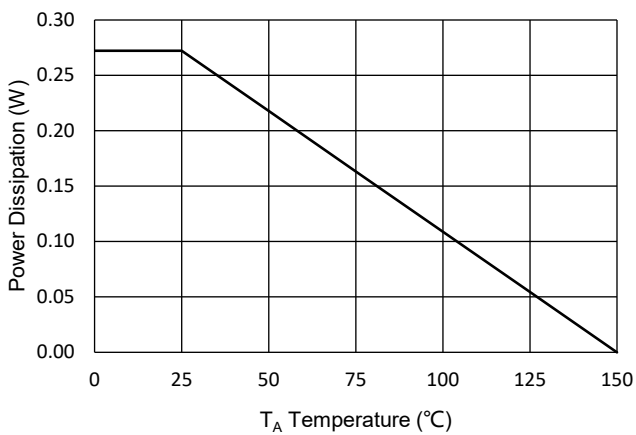


Fig.11 - PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

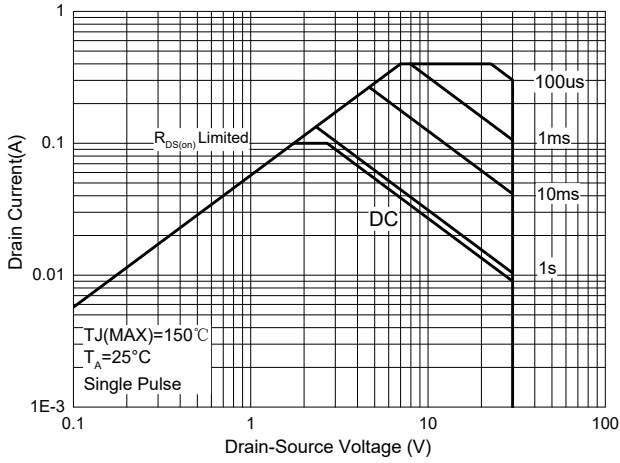
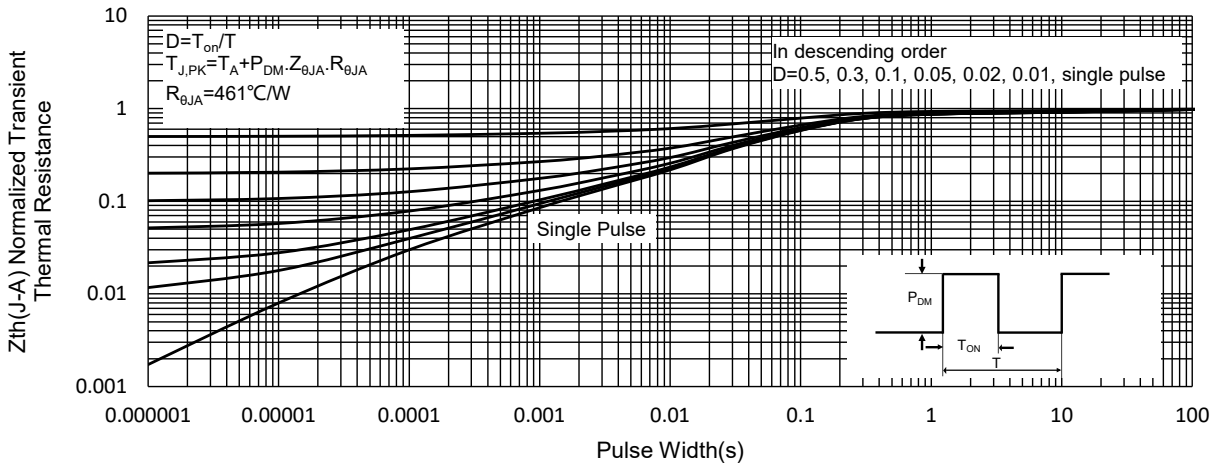


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:8Kpcs/Reel

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