

**Features**

- Trench MV MOSFET Technology
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

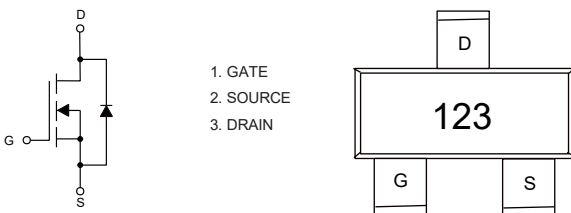
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 370°C/W Junction to Ambient (Note2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	$T_A=25^\circ\text{C}$	200
		$T_A=100^\circ\text{C}$	126
Pulsed Drain Current (Note3)	$I_{DM}$	800	mA
Total Power Dissipation (Note4)	$P_D$	337	mW

Note:

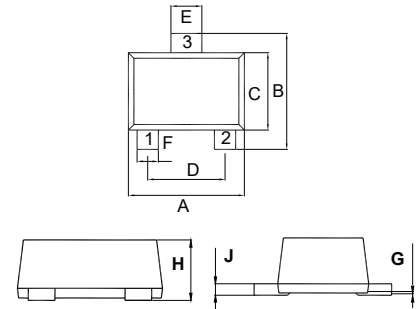
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of  $R_{\theta JA}$  is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with  $T_A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



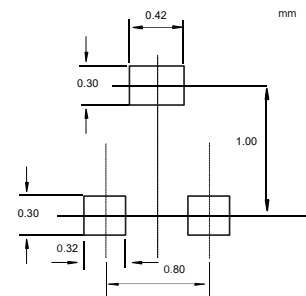
**N-CHANNEL  
MOSFET**

**SOT-723**



DIM	INCHES		MM		NOTE
	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**

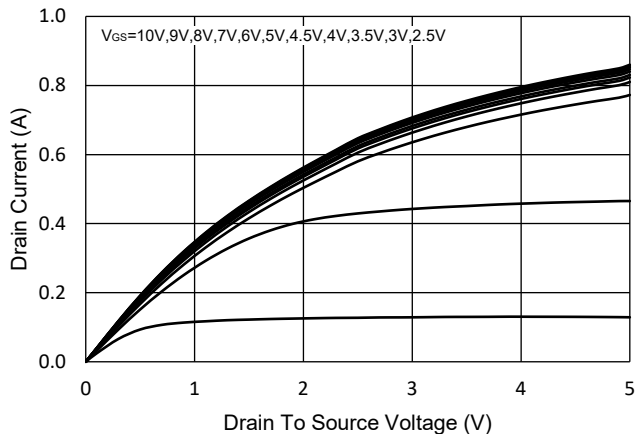


**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

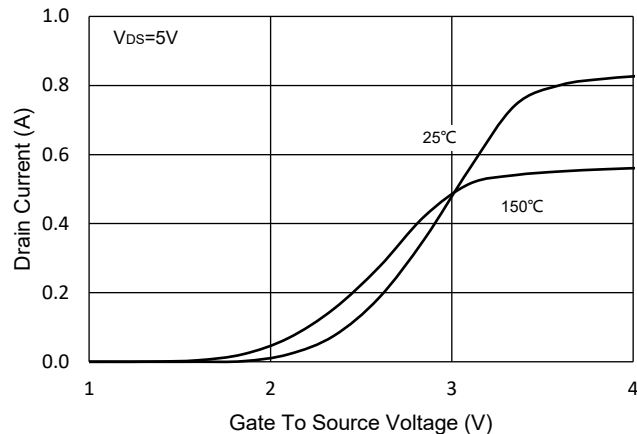
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.8	2.5	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.2A$		2.4	3.4	$\Omega$
		$V_{GS}=4.5V, I_D=0.2A$		2.65	3.6	
Forward Transconductance	$g_{FS}$	$V_{DS}=5V, I_D=0.17A$		450		mS
Gate Resistance	$R_g$	f=1 MHz, Open drain		5.5		$\Omega$
<b>Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				0.2	A
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=0.2A$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F=1A, dI_F/dt=100A/\mu s$		20		ns
Reverse Recovery Charge	$Q_{rr}$			6		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		35		pF
Output Capacitance	$C_{oss}$			2		
Reverse Transfer Capacitance	$C_{rss}$			1.3		
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V, I_D=1A$		1.8		nC
Gate-Source Charge	$Q_{gs}$			0.6		
Gate-Drain Charge	$Q_{gd}$			0.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=50V, V_{GS}=10V, R_G=3\Omega, I_D=1A$		4		ns
Turn-On Rise Time	$t_r$			20		
Turn-Off Delay Time	$t_{d(off)}$			7		
Turn-Off Fall Time	$t_f$			31		

## Curve Characteristics

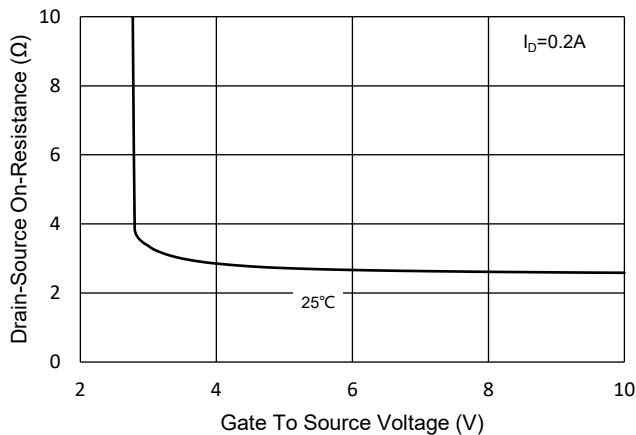
**Fig.1 - Typical Output Characteristics**



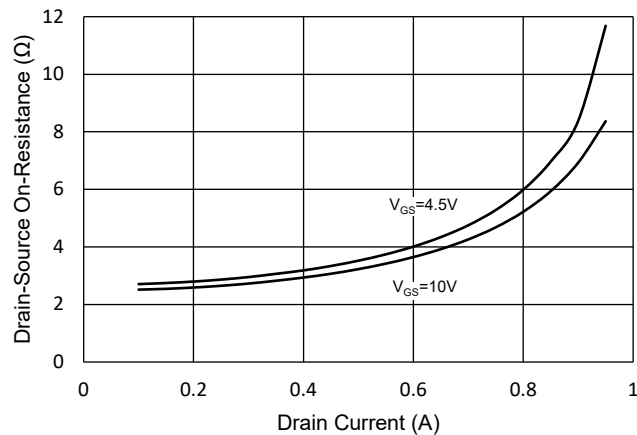
**Fig.2 - Transfer Characteristics**



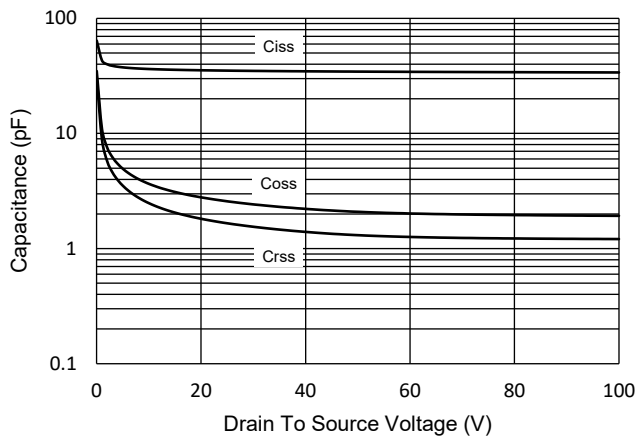
**Fig.3 -  $R_{DS(ON)}$  -  $V_{GS}$**



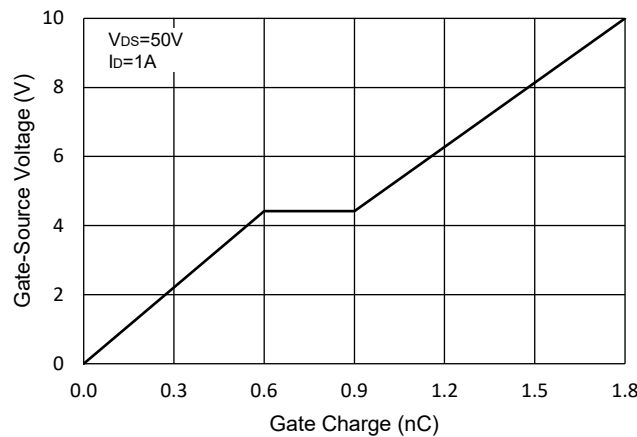
**Fig.4 -  $R_{DS(ON)}$  -  $I_D$**



**Fig.5 - Capacitance Characteristics**

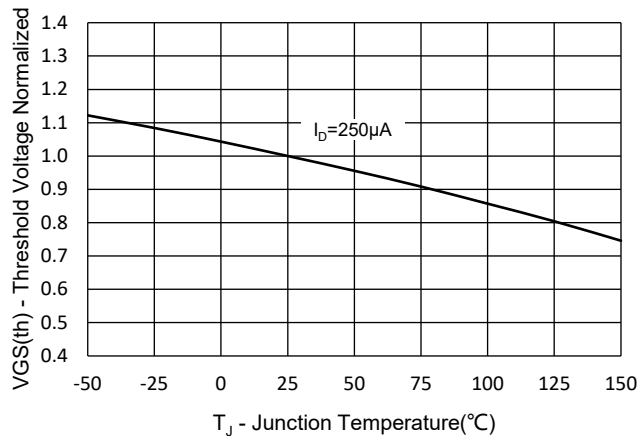


**Fig.6 - Gate Charge**

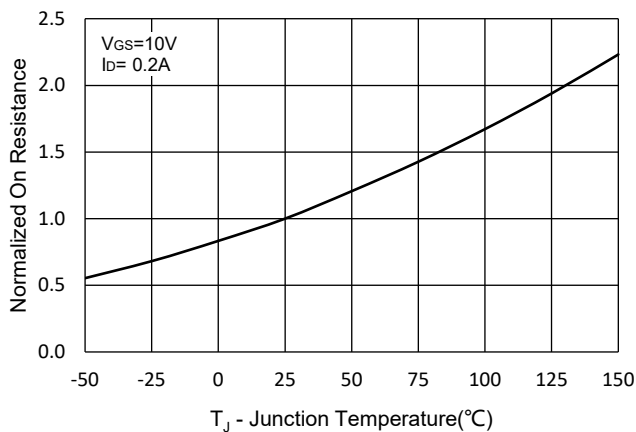


**Curve Characteristics**

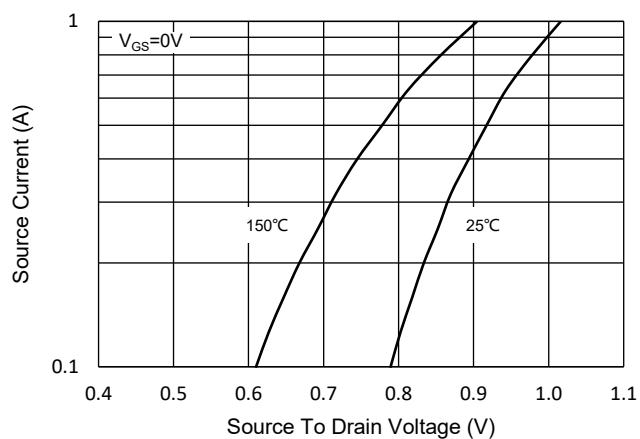
**Fig.7 - Normalized Threshold Voltage**



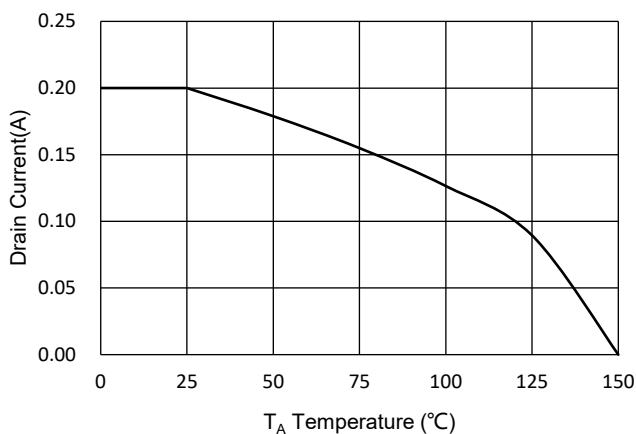
**Fig.8 - Normalized On Resistance Characteristics**



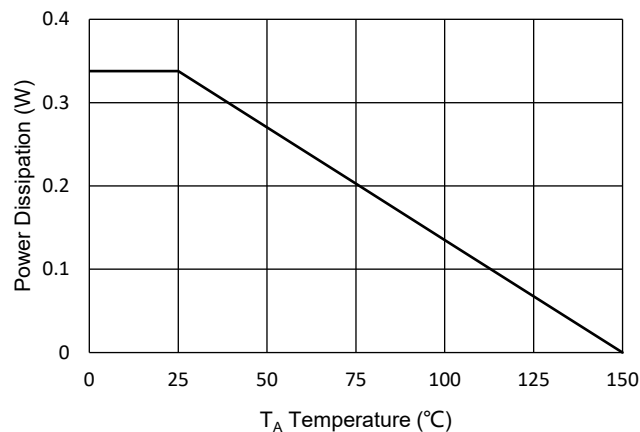
**Fig.9 - I<sub>S</sub> - V<sub>SD</sub>**



**Fig.10 - Drain Current**

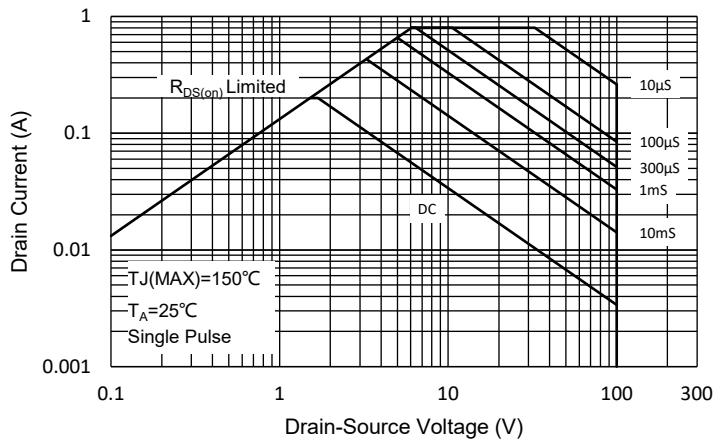


**Fig.11 - PD Dissipation**

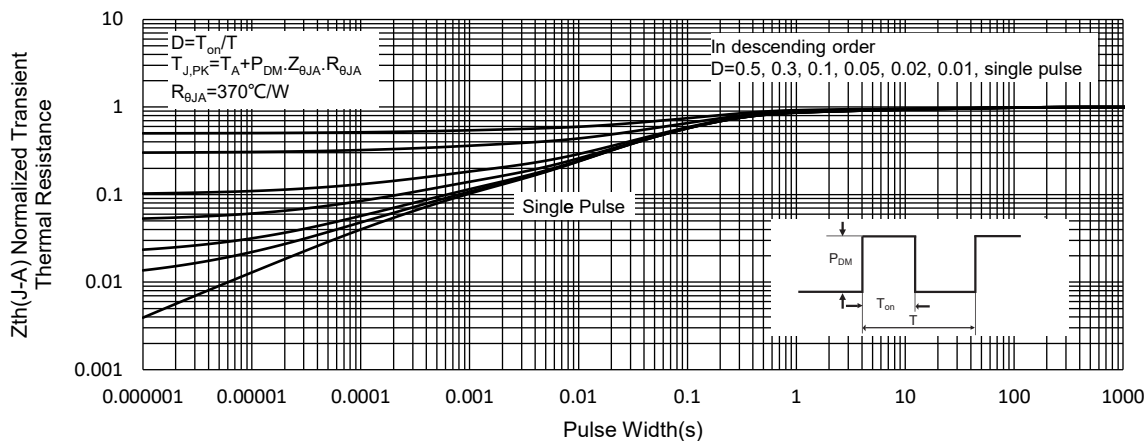


**Curve Characteristics**

**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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