

## Features

- Trench MV MOSFET
- Low  $R_{DS(ON)}$
- 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

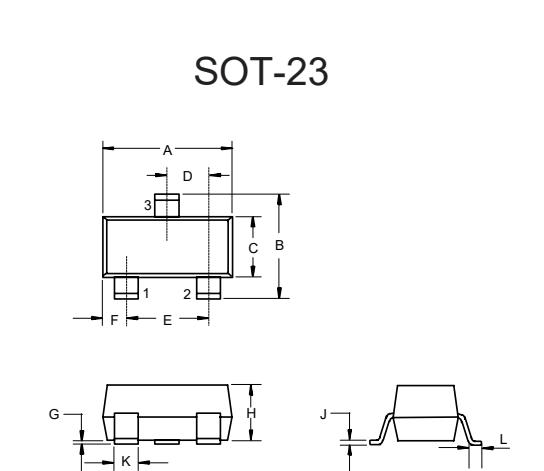
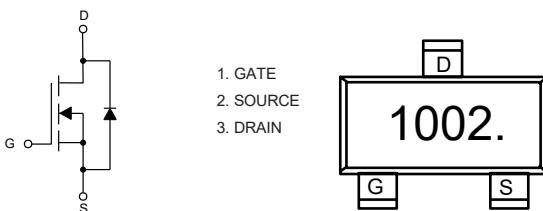
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 105°C/W Junction to Ambient (Note 2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current $T_A=25^\circ\text{C}$	$I_D$	2	A
$T_A=100^\circ\text{C}$		1.3	
Pulsed Drain Current (Note 3)	$I_{DM}$	8	A
Total Power Dissipation (Note 4)	$P_D$	1.2	W

Note:

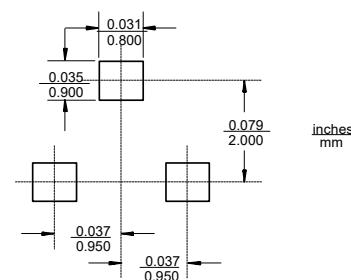
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment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



DIMENSIONS					NOTE	
DIM	INCHES		MM			
	MIN	MAX	MIN	MAX		
A	0.110	0.120	2.80	3.04		
B	0.083	0.104	2.10	2.64		
C	0.047	0.055	1.20	1.40		
D	0.034	0.041	0.85	1.05		
E	0.067	0.083	1.70	2.10		
F	0.018	0.024	0.45	0.60		
G	0.0004	0.006	0.01	0.15		
H	0.035	0.043	0.90	1.10		
J	0.003	0.007	0.08	0.18		
K	0.012	0.020	0.30	0.51		
L	0.007	0.020	0.20	0.50		

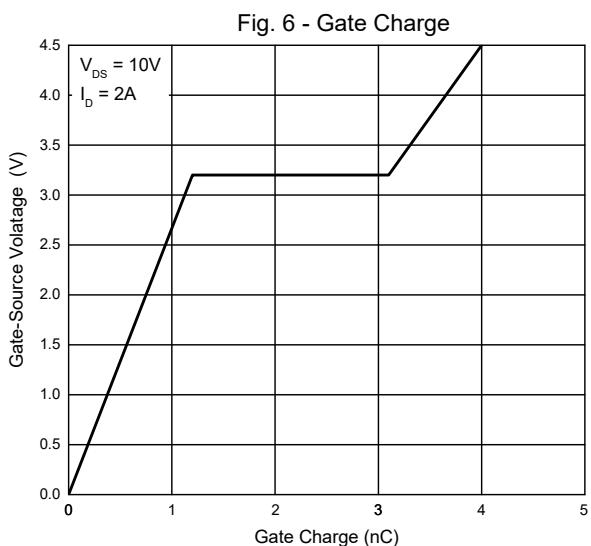
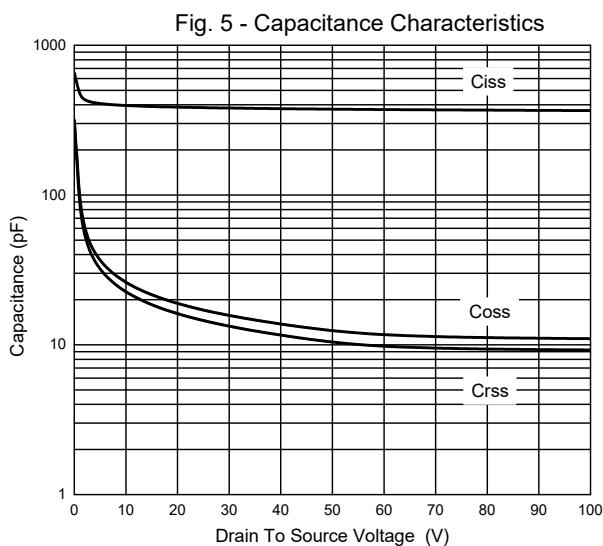
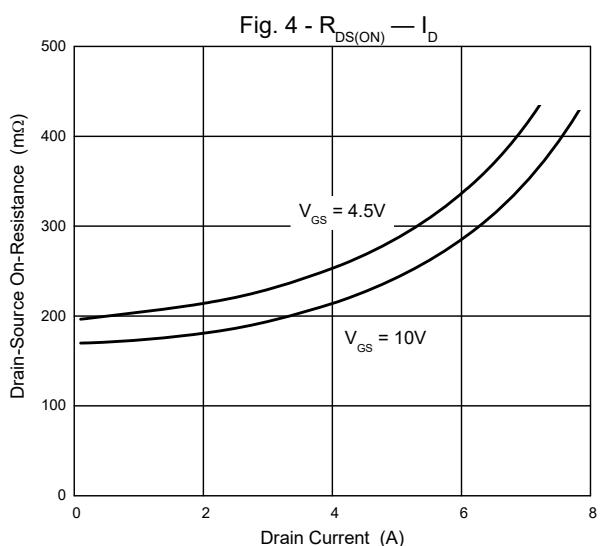
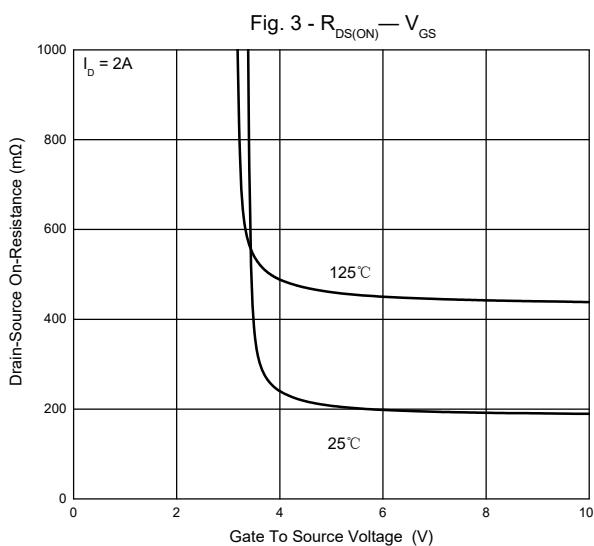
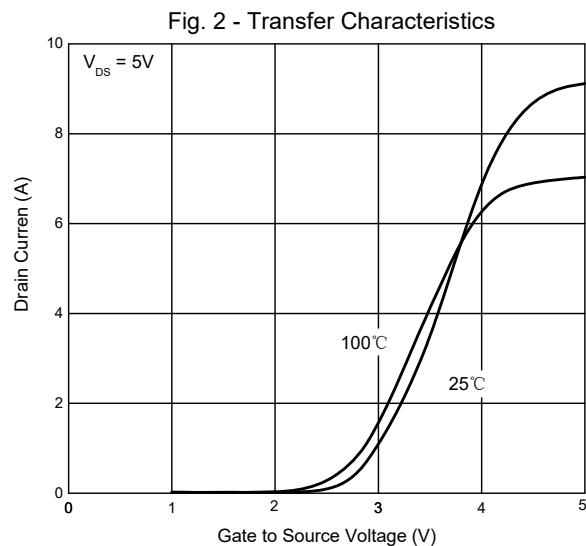
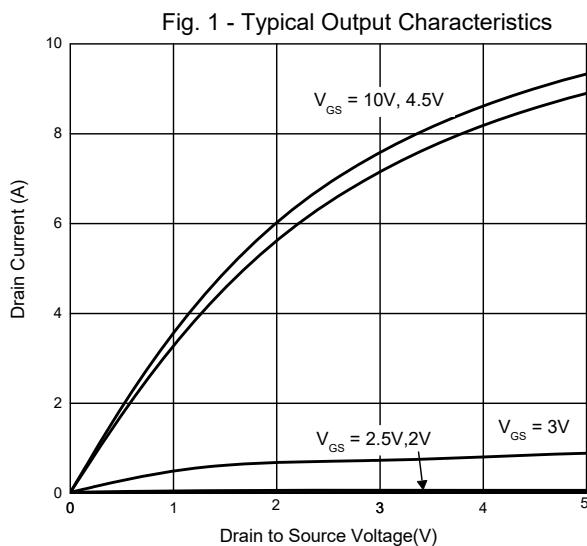
### Suggested Solder Pad Layout



**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-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.7	2.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2A$		190	280	$m\Omega$
		$V_{GS}=4.5V, I_D=2A$		210	300	
Forward Transconductance	$g_{fs}$	$V_{DS}=5V, I_D=2A$		6		S
Gate Resistance	$R_g$	f=1 MHz, Open drain		4		$\Omega$
<b>Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				2	A
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=2A$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F=2A, dI_F/dt=320A/\mu s$		26		ns
Reverse Recovery Charge	$Q_{rr}$			27		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		390		$pF$
Output Capacitance	$C_{oss}$			21		
Reverse Transfer Capacitance	$C_{rss}$			18		
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=4.5V, I_D=2A$		4		$nC$
Gate-Source Charge	$Q_{gs}$			1.2		
Gate-Drain Charge	$Q_{gd}$			1.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=20V, V_{GS}=10V, R_{GEN}=2.2\Omega, I_{DS}=2A$		5.2		$ns$
Turn-On Rise Time	$t_r$			20		
Turn-Off Delay Time	$t_{d(off)}$			12		
Turn-Off Fall Time	$t_f$			13		

## Curve Characteristics



## Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

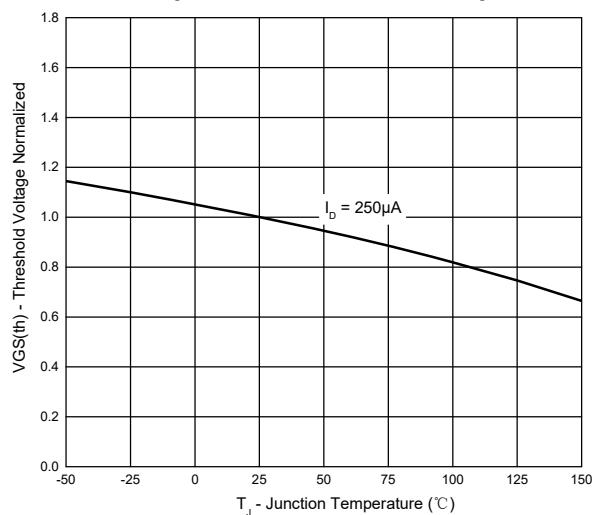


Fig. 8 - Normalized On Resistance Characteristics

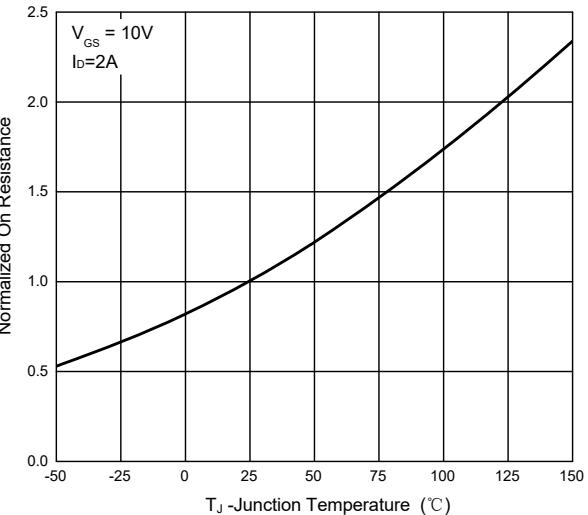


Fig. 9 -  $I_S - V_{SD}$

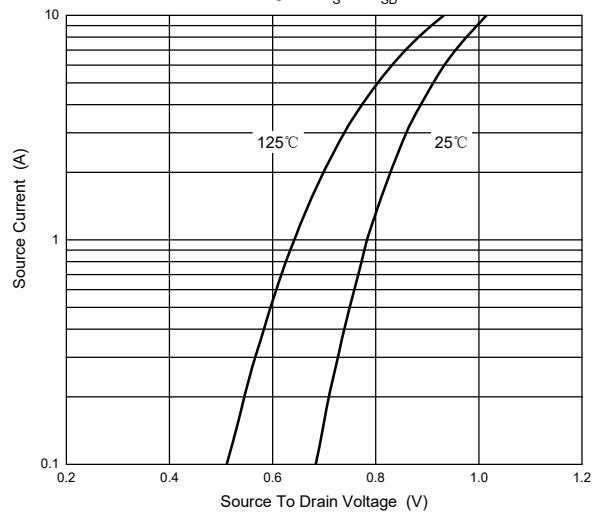


Fig. 10 - Drain Current

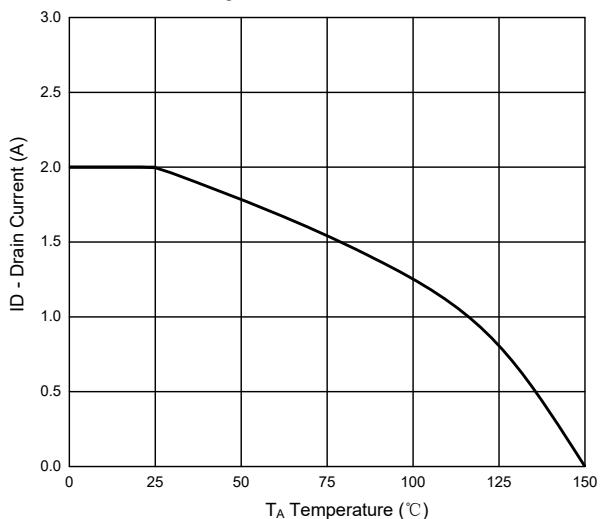
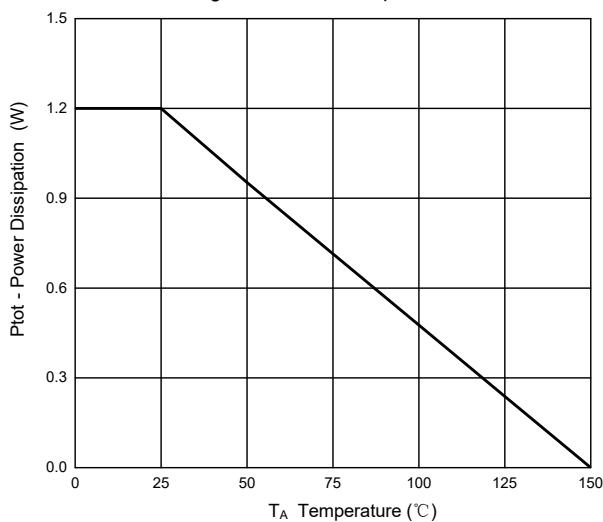
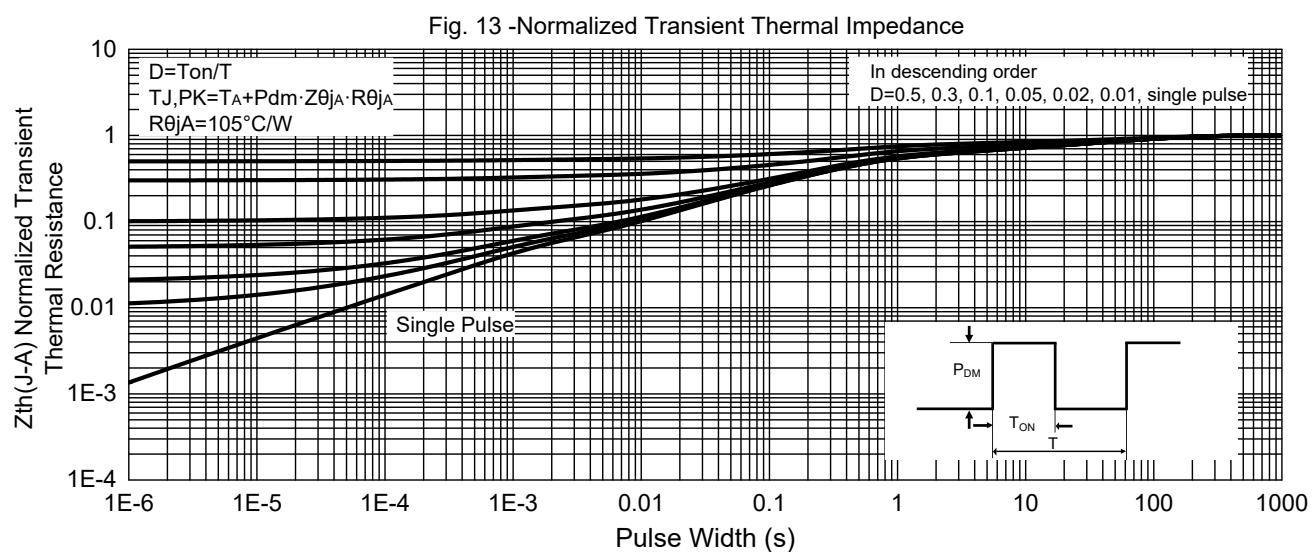
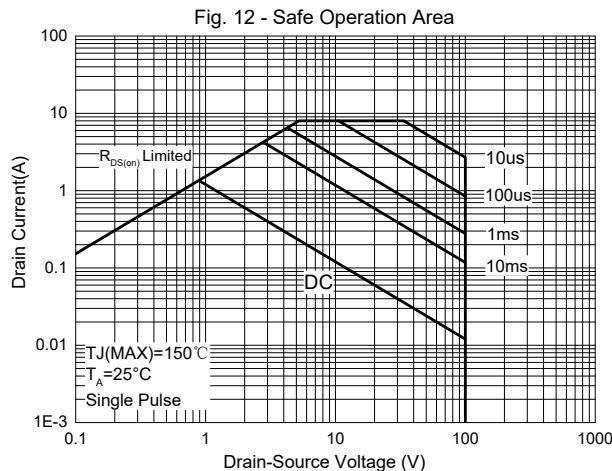


Fig. 11 - Power Dissipation



## Curve Characteristics



## Ordering Information

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

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