

## Features

- High Density Cell Design For Low  $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device <sup>(Note1)</sup>
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## DUAL N-CHANNEL MOSFET

## Maximum Ratings

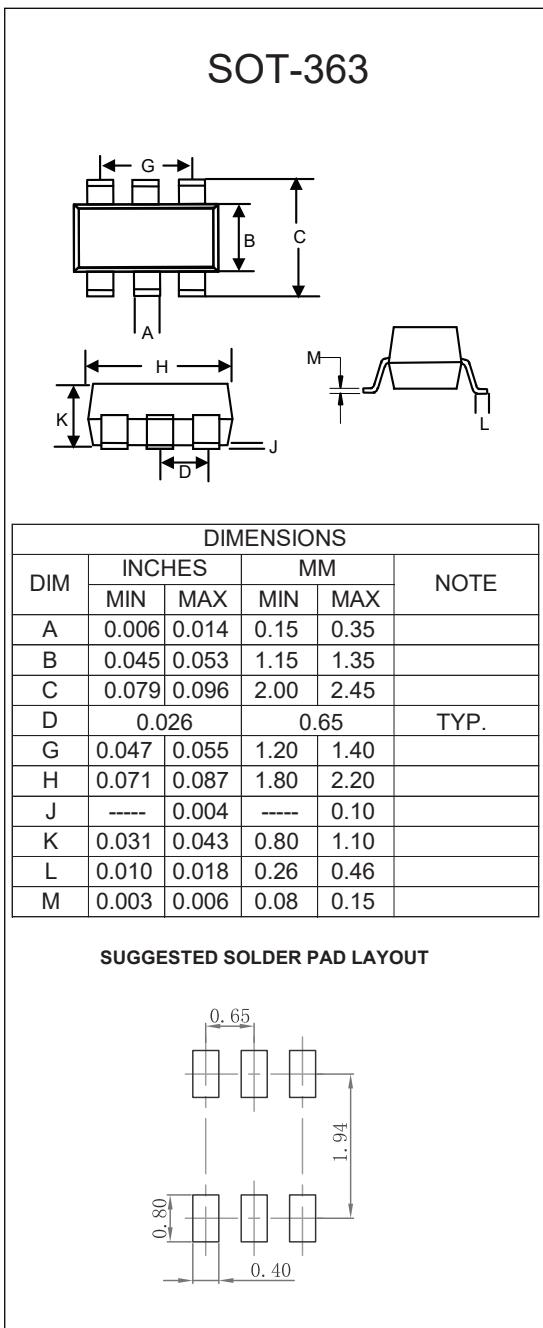
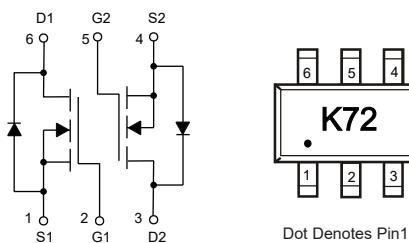
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 415°C/W Junction to Ambient(Steady-State) <sup>(Note2)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	340	mA
		215	
Pulsed Drain Current <sup>(Note3)</sup>	$I_{DM}$	1.36	A
Total Power Dissipation <sup>(Note4)</sup>	$P_D$	300	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 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25^\circ C$ . The Power dissipation  $P_{DSM}$  is based on  $R_{\theta JA} \leq 10$ s and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.
3. Repetitive rating; pulse width limited by max. junction temperature.
4.  $P_D$  is based on max. junction temperature, using junction-ambient thermal resistance.

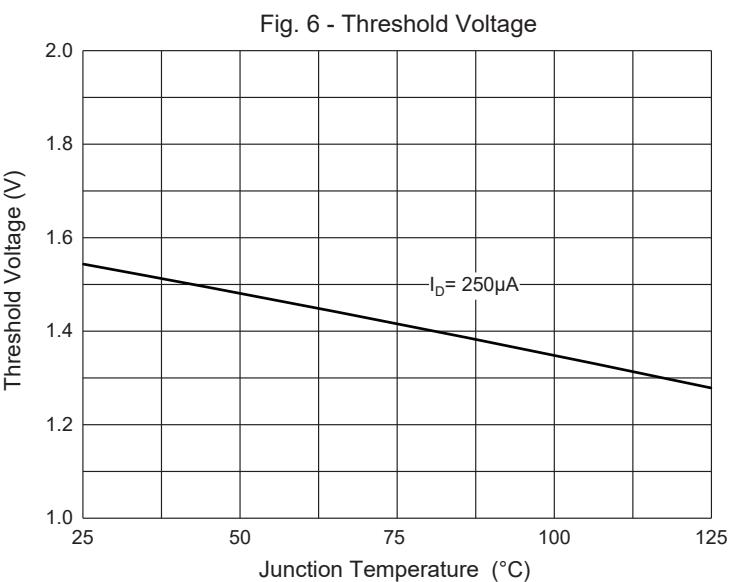
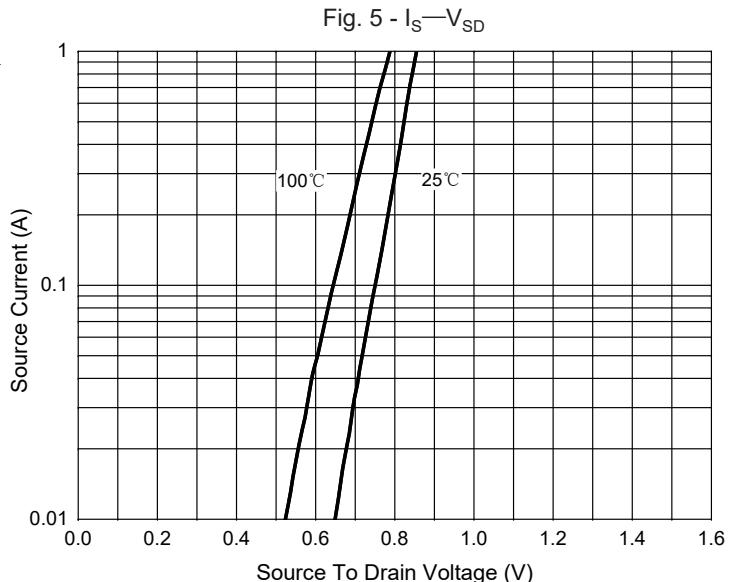
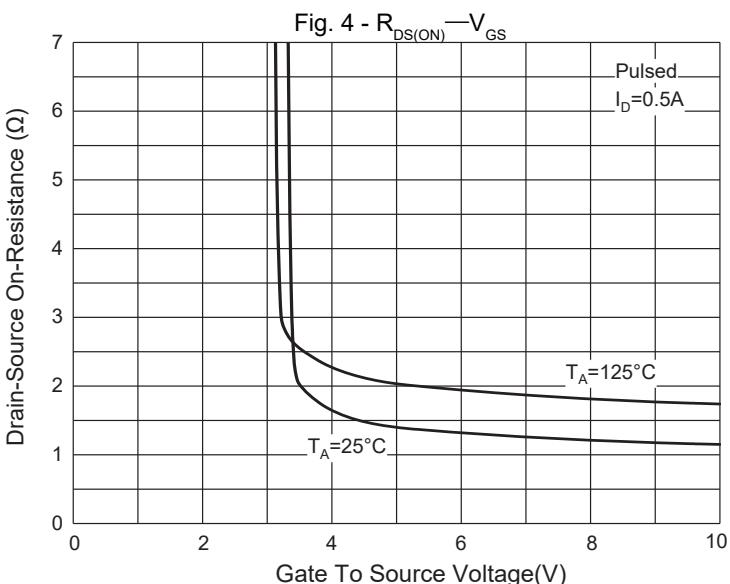
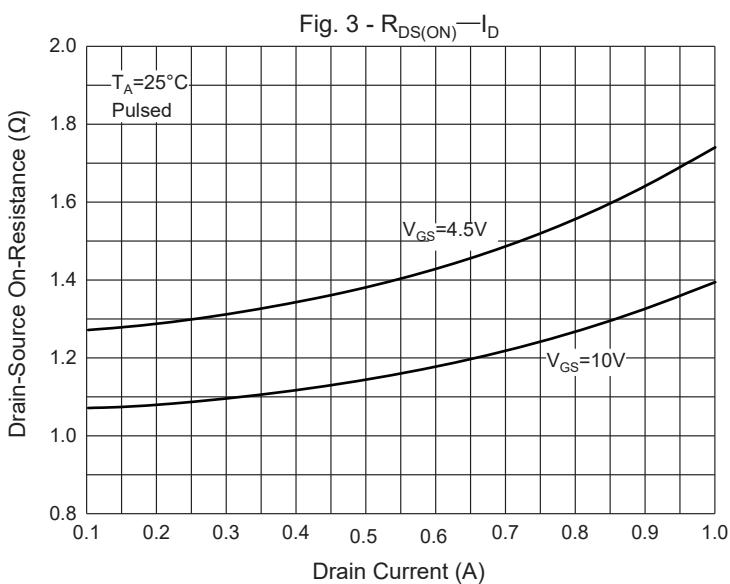
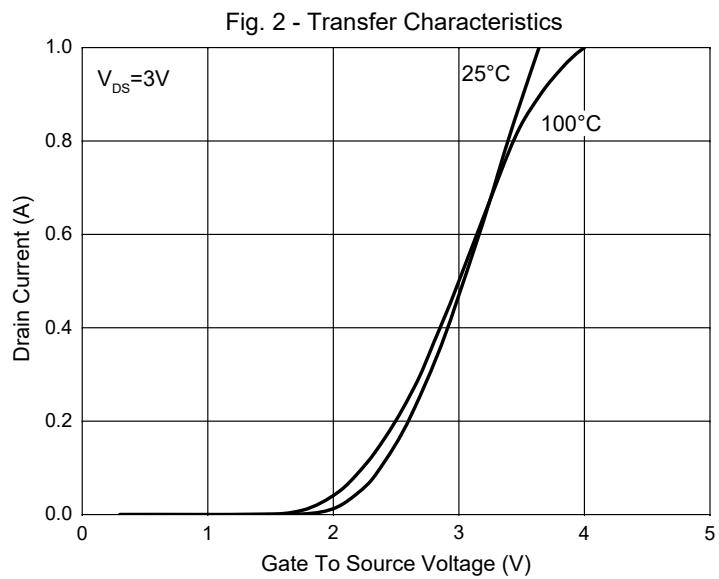
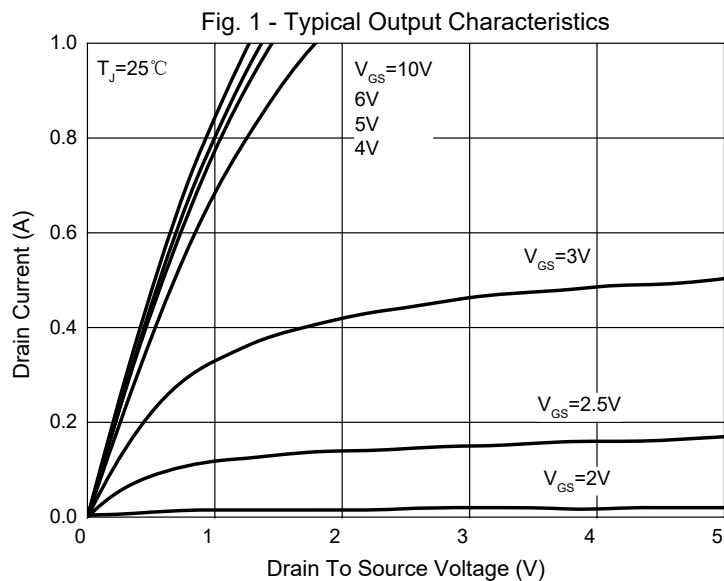
## Internal Structure and Marking Code



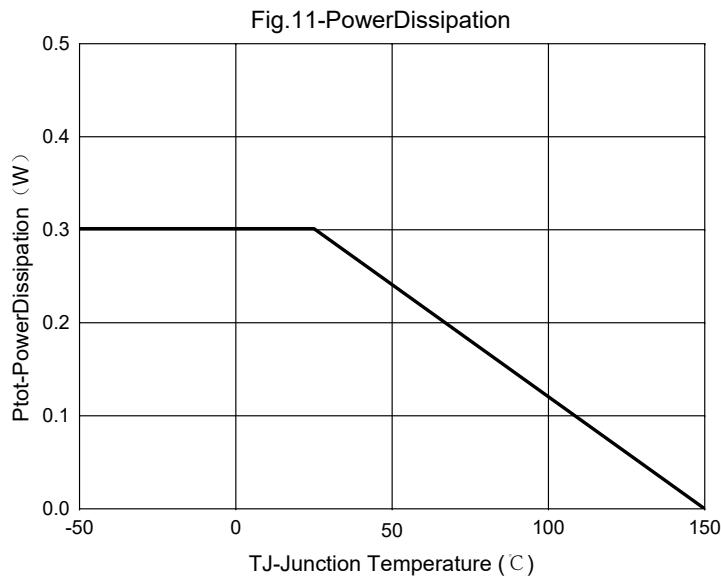
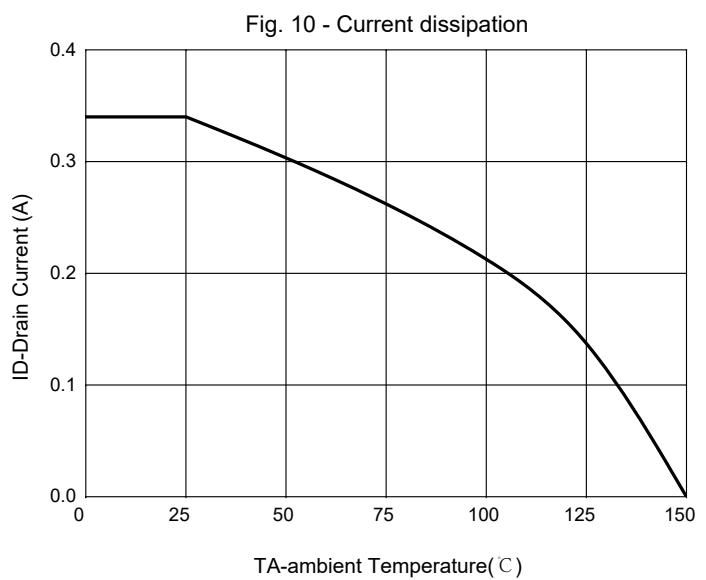
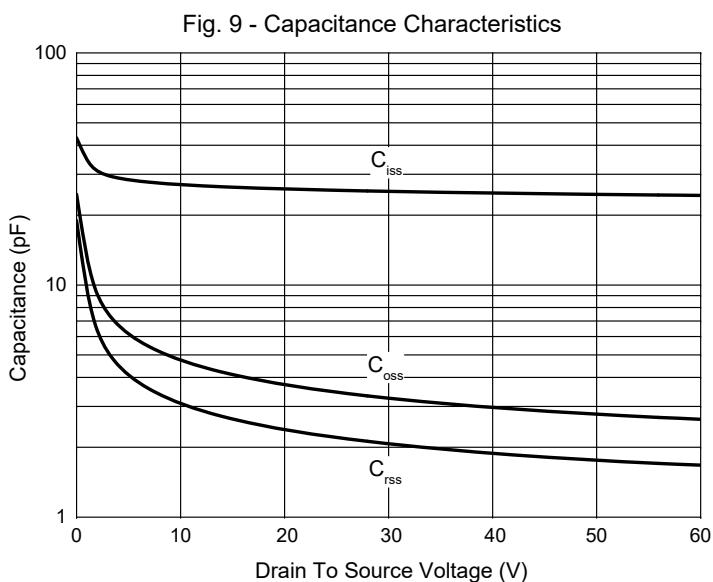
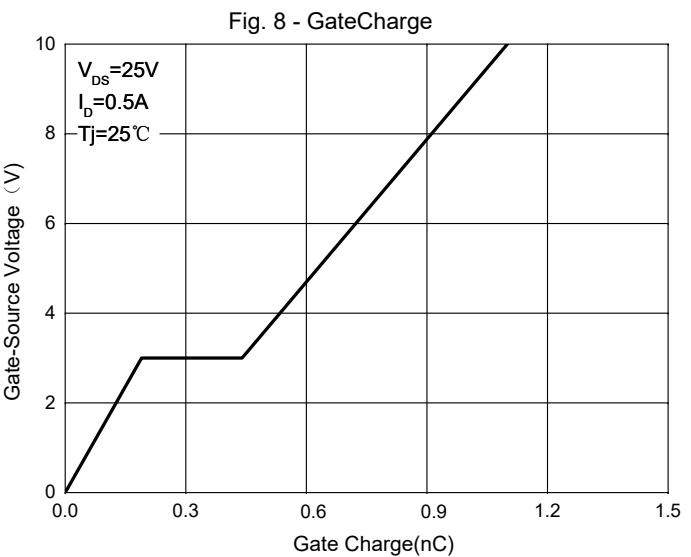
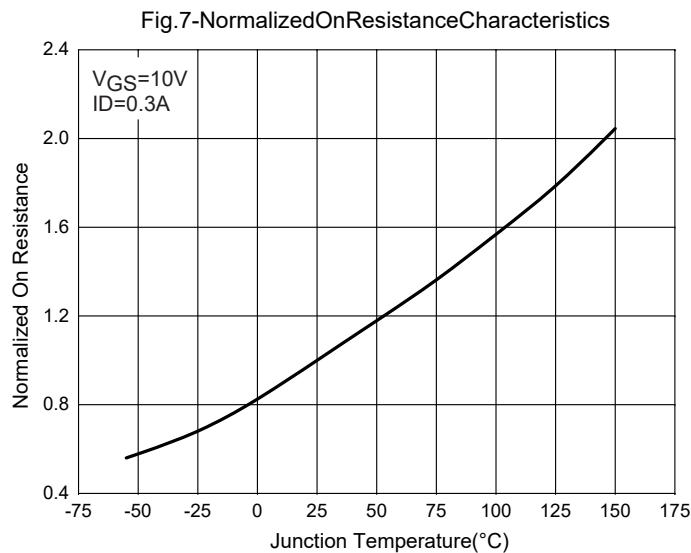
**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 10$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			80	
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.1	2.5	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$		1.3	3	
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=200mA$	80			ms
Gate Resistance	$R_g$	F=1 MHz, Open drain		4.1		$\Omega$
<b>Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				115	mA
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=115mA$	0.55		1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F=0.5A, dI_F/dt=100A/\mu s$		9.4		ns
Reverse Recovery Charge	$Q_{rr}$			3.1		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		25.2		pF
Output Capacitance	$C_{oss}$			3.5		
Reverse Transfer Capacitance	$C_{rss}$			2.2		
Total Gate Charge	$Q_g$	$V_{DS}=25V, V_{GS}=10V, I_D=0.5A$		1.1		nC
Gate-Source Charge	$Q_{gs}$			0.19		
Gate-Drain Charge	$Q_{gd}$			0.25		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=25V, V_{GEN}=10V, R_{GEN}=25\Omega, I_{DS}=500mA$		2.3		ns
Turn-On Rise Time	$t_r$			2.7		
Turn-Off Delay Time	$t_{d(off)}$			6.3		
Turn-Off Fall Time	$t_f$			3		

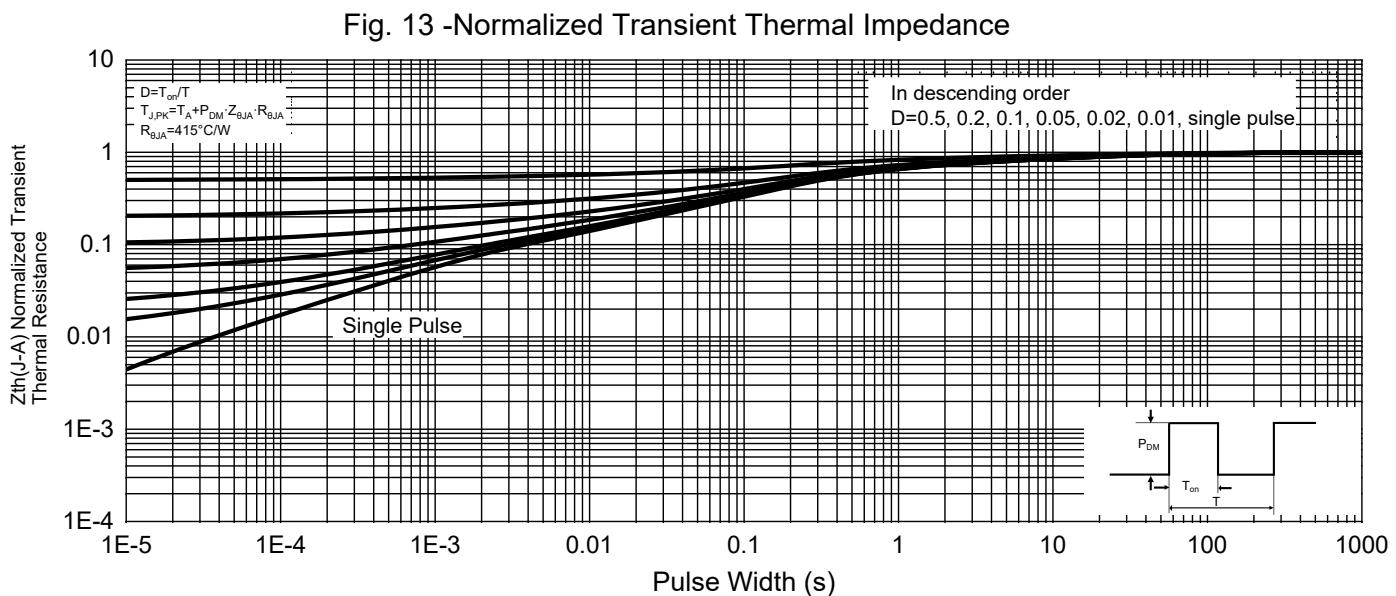
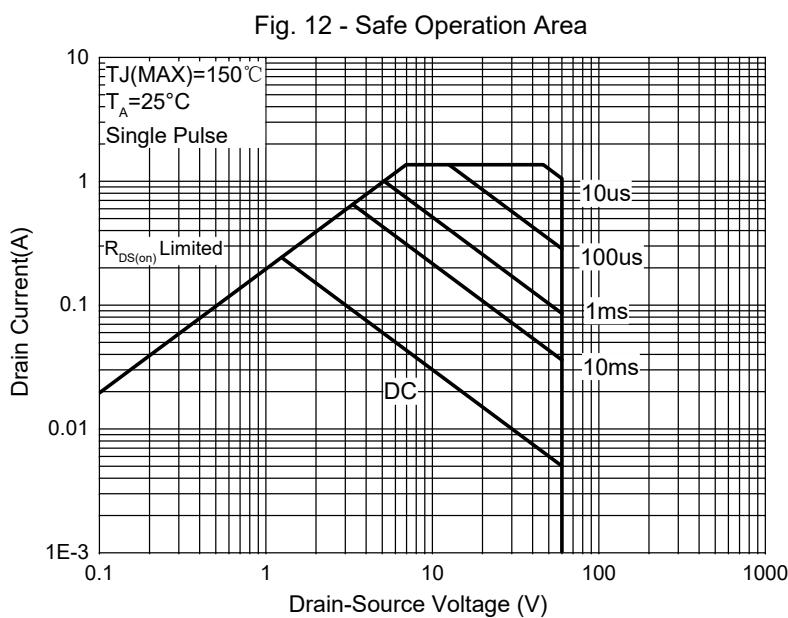
## Curve Characteristics



## Curve Characteristics



## Curve Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel
Part Number-TPQ2	Tape&Reel:3Kpcs/Reel

For packaging details, go to our website at <https://www.mccsemi.com/pdf/ProductPackaging/SOT-363%20Package.pdf>

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