

Features

- AEC-Q101 Qualified
- Split Gate Trench MOSFET Technology
- High Density Cell Design For Ultra Low $R_{DS(on)}$
- 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 +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 60°C/W Junction to Ambient^(Note2)
- Thermal Resistance: 2.5°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	I_D	60	A
	$T_C=100^\circ\text{C}$		42	
Pulsed Drain Current ^(Note3)		I_{DM}	240	A
Total Power Dissipation ^(Note4)		P_D	60	W
Single Pulse Avalanche Energy ^(Note 5)		E_{AS}	95	mJ

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-case thermal resistance.
5. $T_J=25^\circ\text{C}$, $V_{DD}=50\$

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=48V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.6	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$		4.5	6	m Ω
		$V_{GS}=4.5V, I_D=20A$		6.8	10	
Gate Resistance	R_g	f=1 MHz, Open drain		1.6		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				60	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=20A$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F=20A, dI_F/dt=100A/\mu s$		37		ns
Reverse Recovery Charge	Q_{rr}			32		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		1666		pF
Output Capac						

Curve Characteristics

Fig. 1 - Typical Output Characteristics

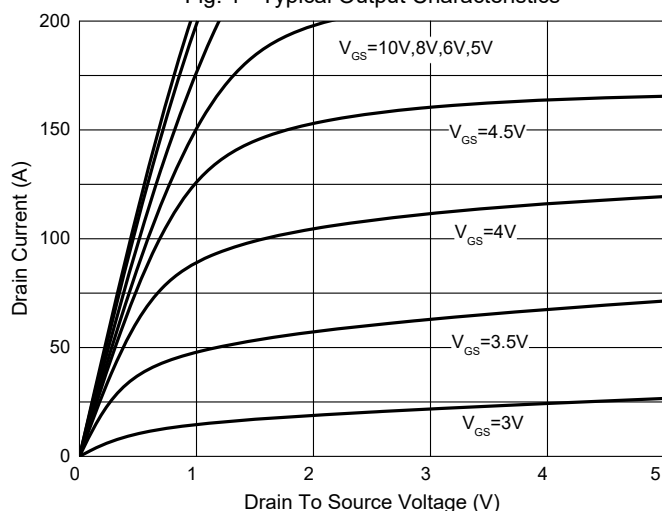


Fig. 2 - Transfer Characteristics

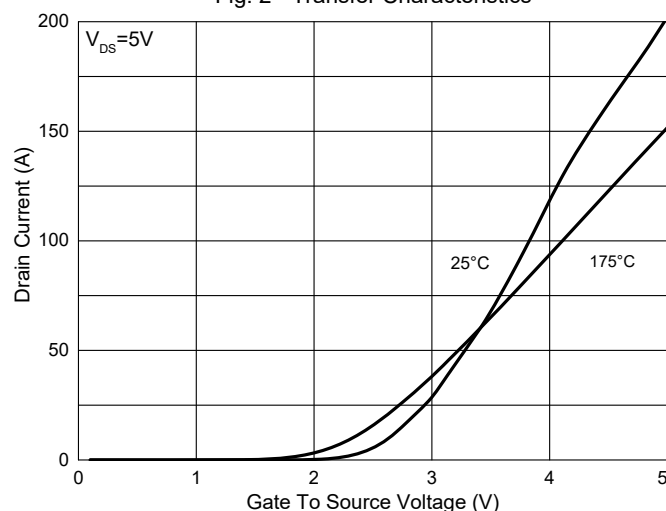


Fig. 3 - $R_{DS(ON)}$ — V_{GS}

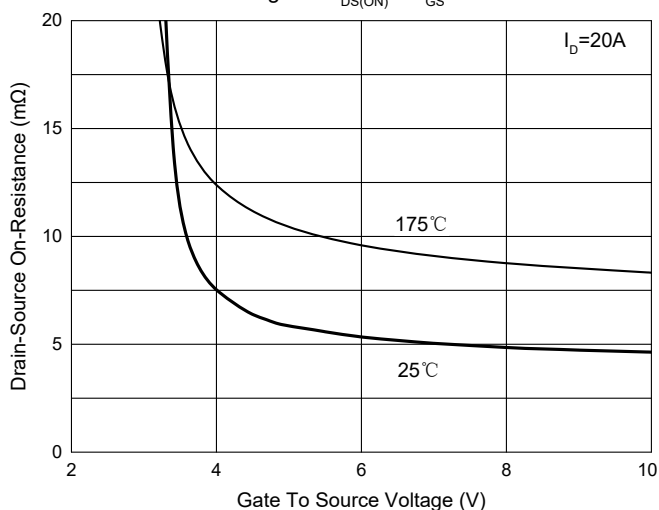


Fig. 4 - $R_{DS(ON)}$ — I_D

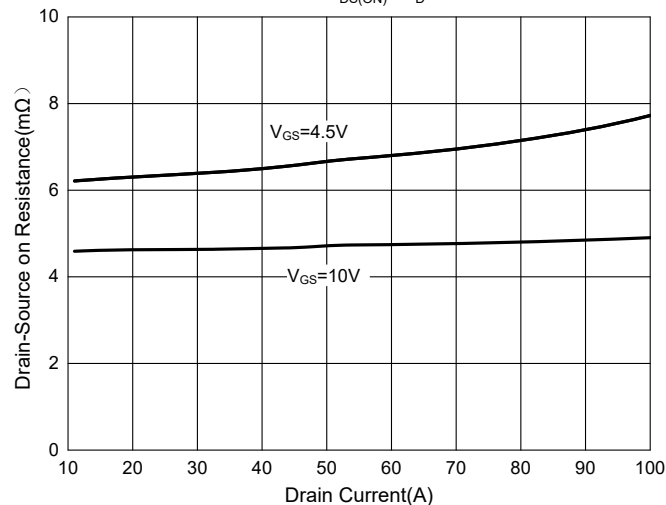
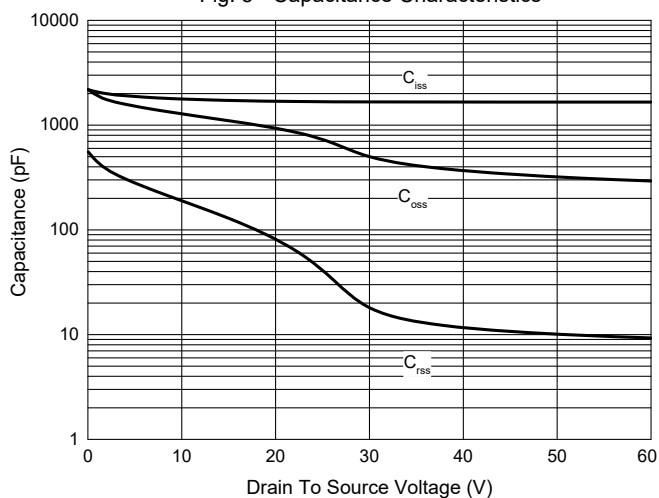


Fig. 5 - Capacitance Characteristics



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

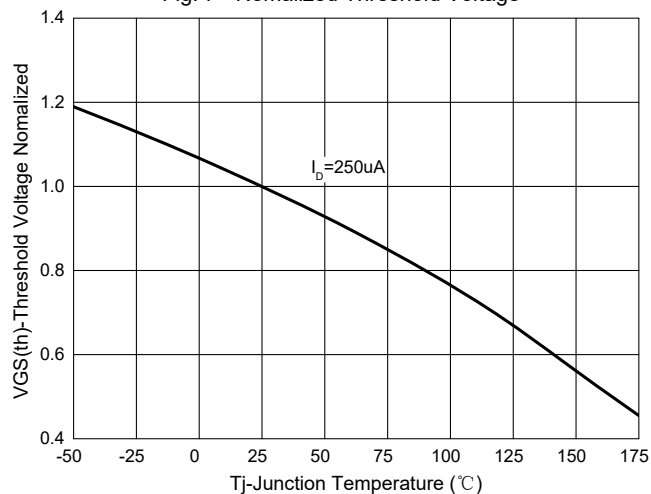


Fig.8-Normalized On Resistance Characteristics

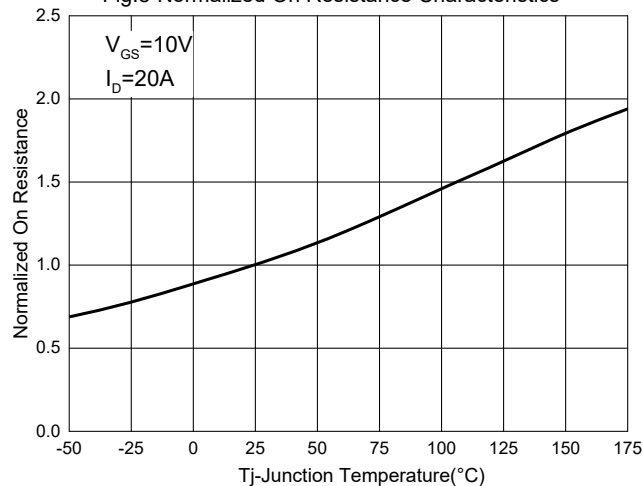
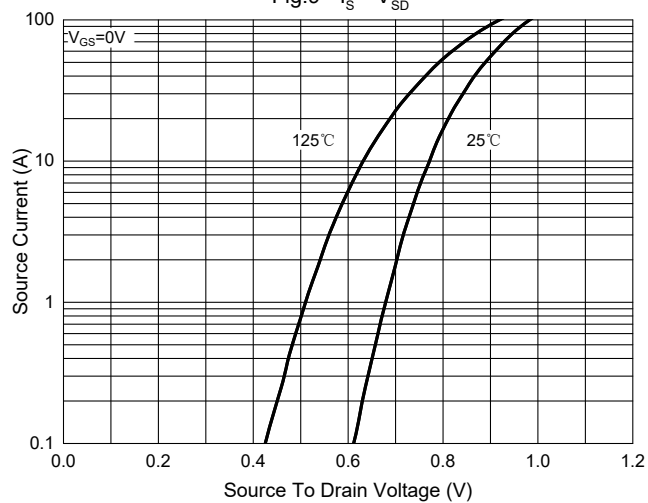


Fig.9 - $I_S - V_{SD}$



Curve Characteristics

Fig. 12 - Safe Operation Area

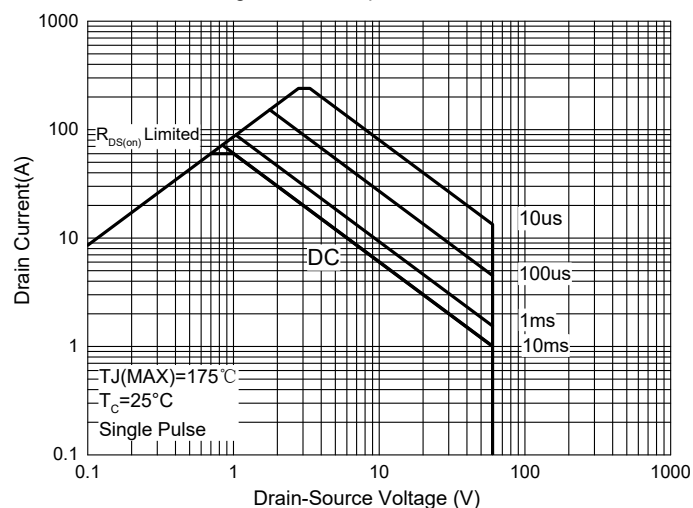
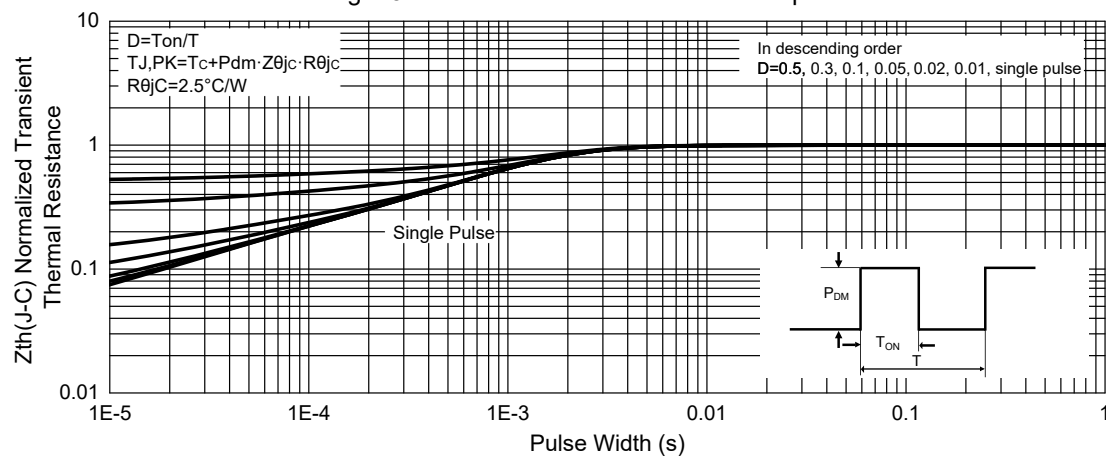


Fig. 13 -Normalized Transient Thermal Impedance



Ordering Information

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

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