

**Features**

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

**Maximum Ratings**

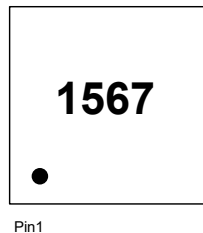
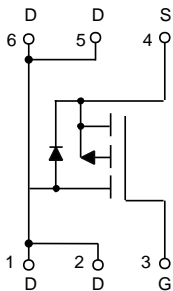
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62.5°C/W Junction to Ambient<sup>(Note 2)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current <sup>(Note 3)</sup>	$I_D$	$T_A=25^\circ C$	-9 A
		$T_A=70^\circ C$	-7.2 A
Pulsed Drain Current <sup>(Note 4)</sup>	$I_{DM}$	-36	A
Total Power Dissipation	$P_D$	2	W

**Note:**

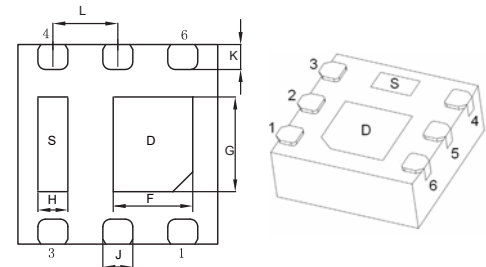
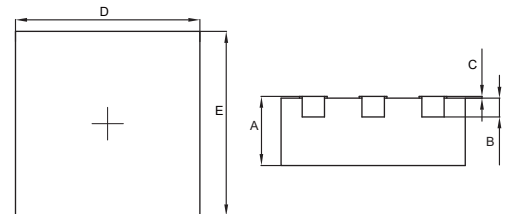
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The Value of  $R_{\theta JA}$  is Measured with the Device Mounted on 1 in<sup>2</sup> FR-4 Board with 2oz. Copper, in a Still Air Environment with  $T_A=25^\circ C$ .
3. The Current Rating is Based on the  $t \leq 10s$  Junction to Ambient Thermal Resistance Rating.
4. Repetitive Rating, Pulse Width Limited by Junction Temperature.

**Internal Structure and Marking Code**



**P-CHANNEL MOSFET**

**DFN2020-6J**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.030	0.034	0.750	0.850	
B	0.008		0.200		BSC.
C	0.000	0.004	0.000	0.100	
D	0.075	0.083	1.900	2.100	
E	0.075	0.083	1.900	2.100	
F	0.024	0.031	0.610	0.810	
G	0.028	0.036	0.710	0.910	
H	0.008	0.016	0.200	0.400	
J	0.008	0.016	0.200	0.400	
K	0.006	0.014	0.150	0.350	
L	0.026		0.650		BSC.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.75	-1	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-6.7A$		14	18	m $\Omega$
		$V_{GS}=-2.5V, I_D=-6.2A$		18	24	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=-1A$			-1.2	V
Diode Forward Current	$I_S$				-2.7	A
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		2760		pF
Output Capacitance	$C_{oss}$			262		
Reverse Transfer Capacitance	$C_{rss}$			220		
Total Gate Charge	$Q_g$	$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-4A$		34		nC
Gate-Source Charge	$Q_{gs}$			3.5		
Gate-Drain Charge	$Q_{gd}$			8.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-15V, V_{GEN}=-4.5V, I_D=-4A, R_g=1\Omega$		7.5		ns
Turn-On Rise Time	$t_r$			25		
Turn-Off Delay Time	$t_{d(off)}$			125		
Turn-Off Fall Time	$t_f$			96		

**Curve Characteristics**

Fig. 1 - Typical Output Characteristics

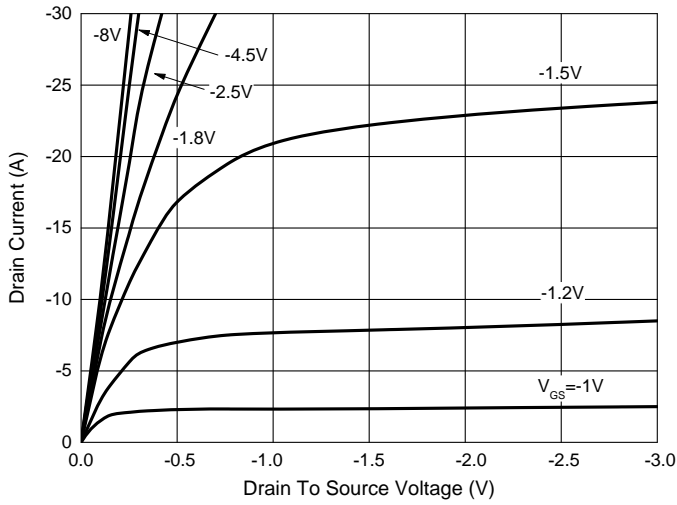


Fig. 2 - Transfer Characteristics

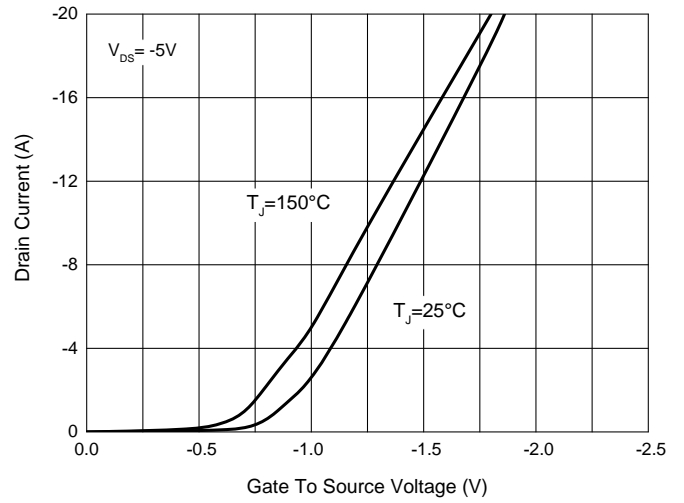


Fig. 3 - Capacitance Characteristics

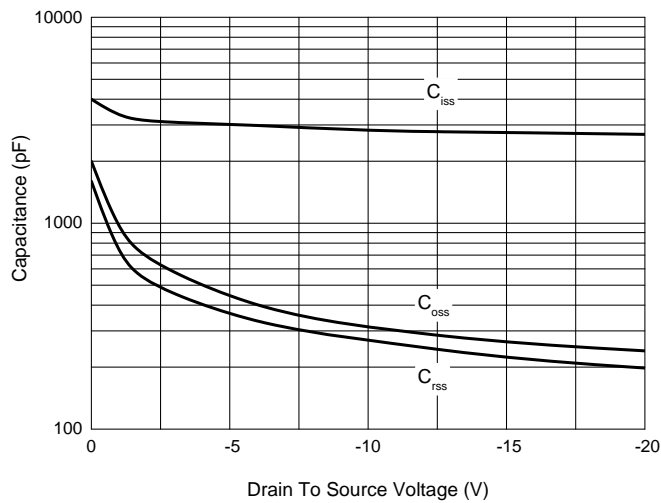


Fig. 4 - Total Gate Charge Characteristics

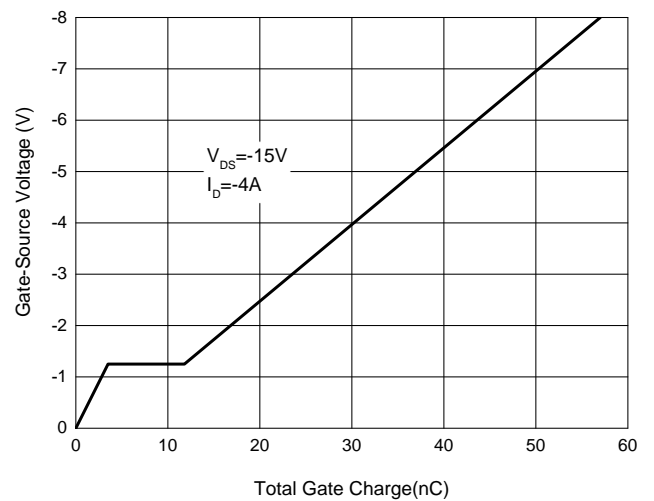


Fig. 5 -  $R_{DS(ON)}$  vs  $I_D$

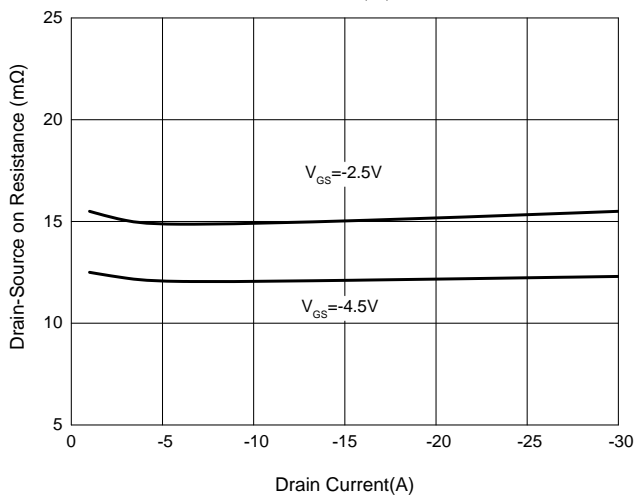
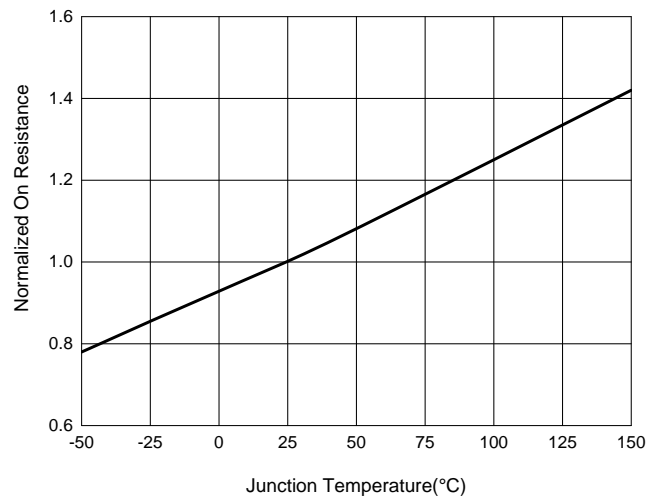


Fig. 6 - Normalized On Resistance Characteristics



## Ordering Information

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

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