

Features

- Advanced Trench Cell Design
- Extremely Low Threshold Voltage
- Surface-Mounted Package
- 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)

Maximum Ratings

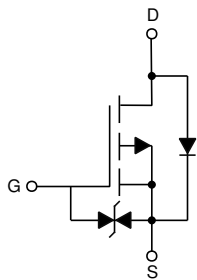
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 80°C/W Junction to Ambient⁽²⁾

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-5.4	A
Pulsed Drain Current ⁽³⁾	I_{DM}	-21.6	A
Total Power Dissipation	P_D	1.56	W

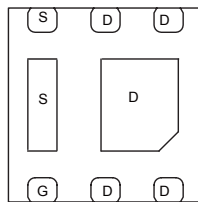
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on 1 in² pad area, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

Internal Structure



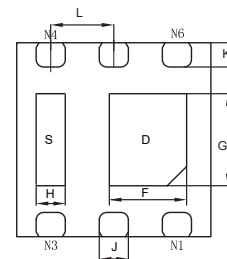
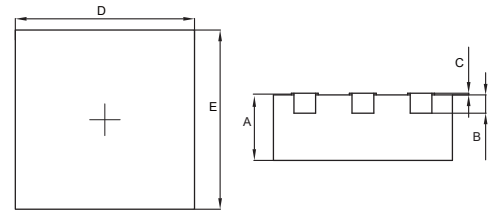
1,2,5,6. DRAIN
3. GATE
4. SOURCE



Bottom View

**P-CHANNEL
MOSFET**

DFN2020-6LE



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	0.035	0.700	0.900	
B	0.008		0.200		REF.
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		TYP.

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 10V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1		-3	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-5A$		29.5	35.4	m Ω
		$V_{GS}=-4.5V, I_D=-3A$		53.1	69	m Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-5.4	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-5A$			-1.2	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		915		pF
Output Capacitance	C_{oss}			93		
Reverse Transfer Capacitance	C_{rss}			72		
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-5A$		16.2		nC
Gate-Source Charge	Q_{gs}			2.4		
Gate-Drain Charge	Q_{gd}			3.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-15V, V_{GEN}=-10V,$ $R_G=3.9\Omega, R_L=3\Omega,$ $I_{DS}=-5A$		215		ns
Turn-On Rise Time	t_r			293		
Turn-Off Delay Time	$t_{d(off)}$			1140		
Turn-Off Fall Time	t_f			702		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

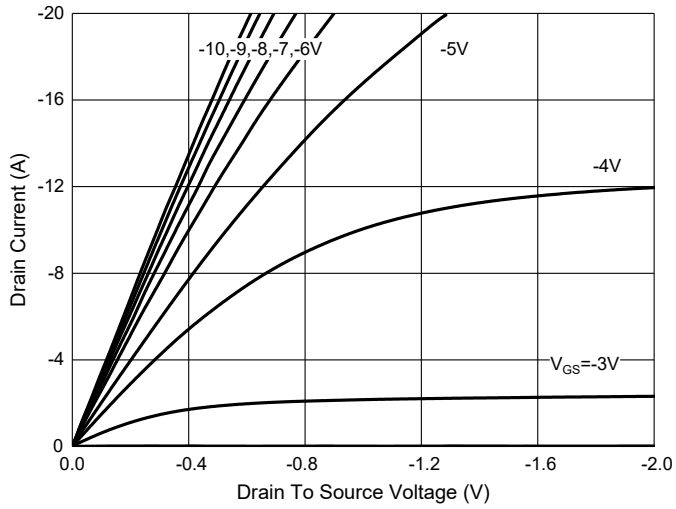


Fig. 2 - $I_S - V_{SD}$

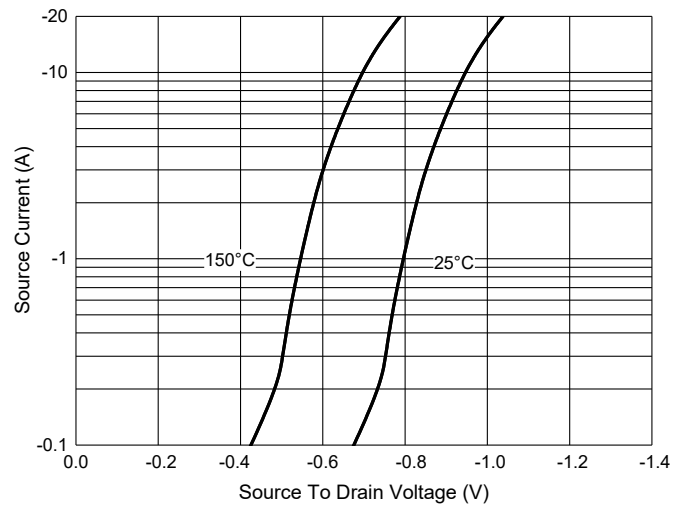


Fig. 3 - $R_{DS(ON)} - I_D$

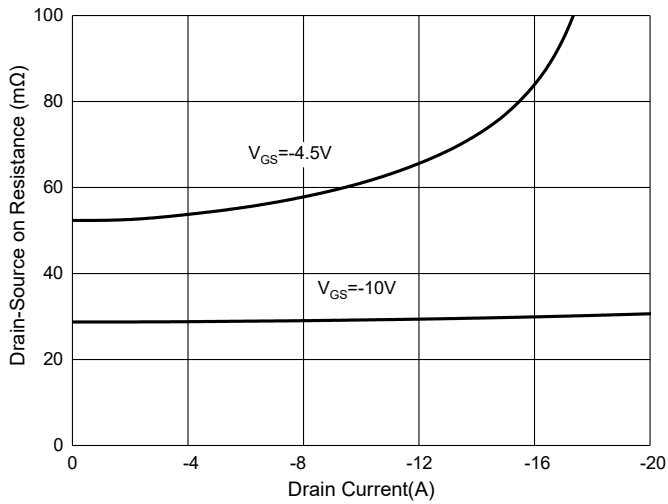


Fig. 4 - Normalized On Resistance Characteristics

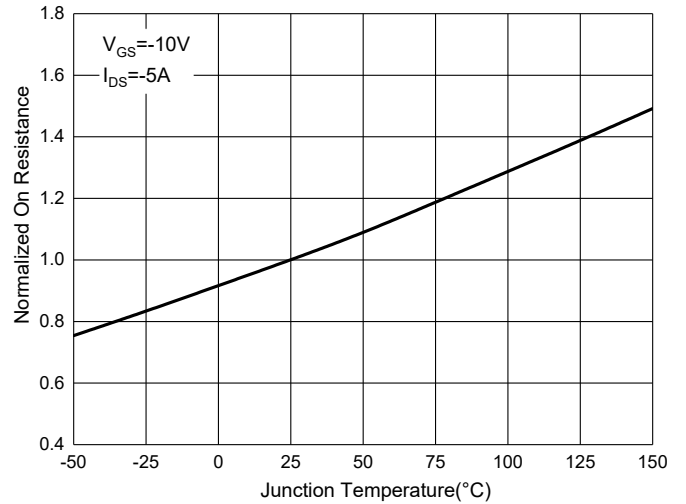


Fig. 5 - Capacitance Characteristics

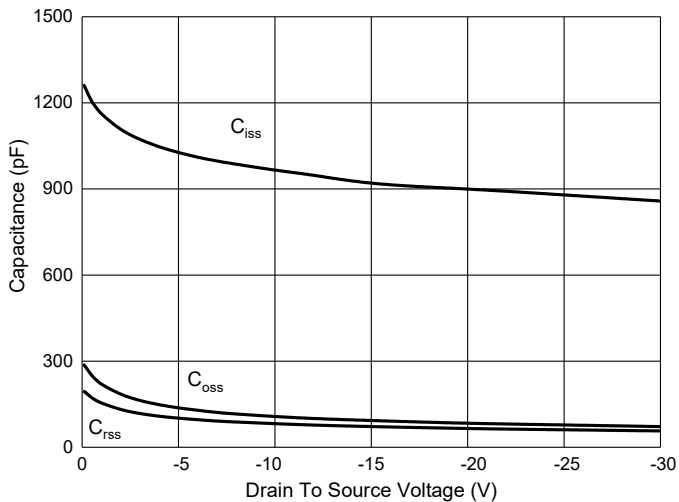
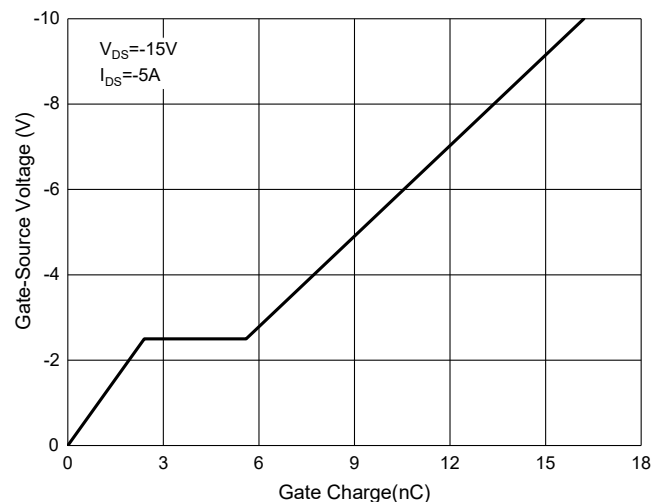


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

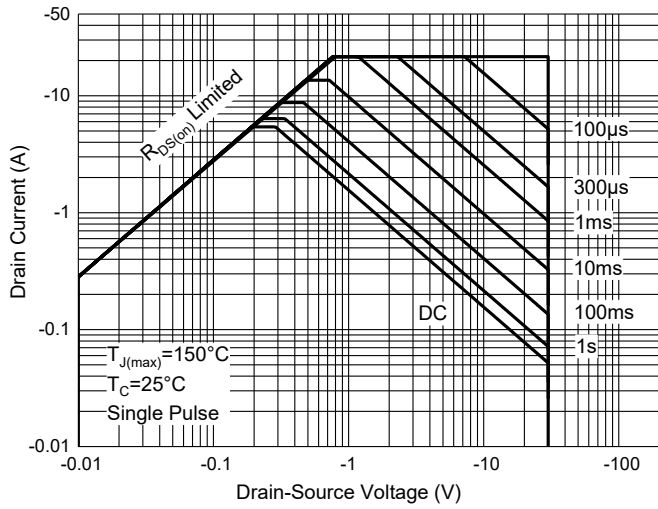
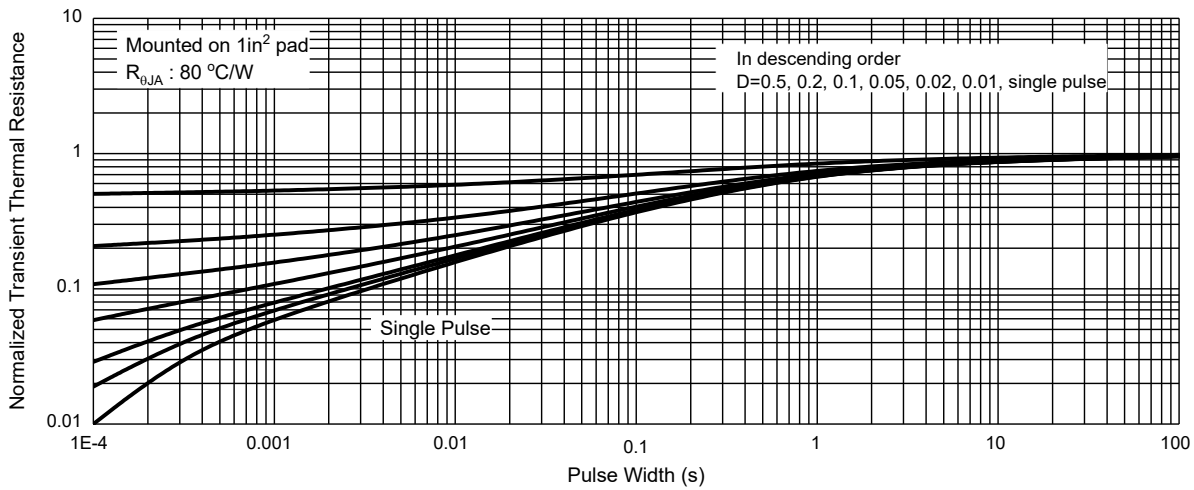


Fig. 8 - Normalized Maximum Transient Thermal Impedance



Ordering Information

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

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