

Features

- Very Low FOM $R_{DS(on)} \times Q_g$
- 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)
- Moisture Sensitivity Level 3

Maximum Ratings

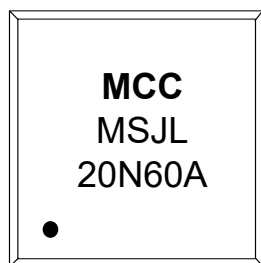
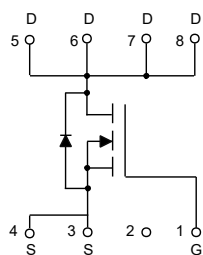
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 0.637°C/W Junction to Case⁽²⁾

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current	I_D	20	A
Pulsed Drain Current ⁽³⁾	I_{DM}	80	A
Total Power Dissipation	P_D	196	W
Single Pulsed Avalanche Energy ⁽⁴⁾	E_{AS}	420	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. Surface Mounted on 1 in² pad area, t ≤ 10 sec
3. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.
4. $T_J = 25^\circ\text{C}$, $V_{DD} = 50\text{V}$, $I = 3.3\text{A}$

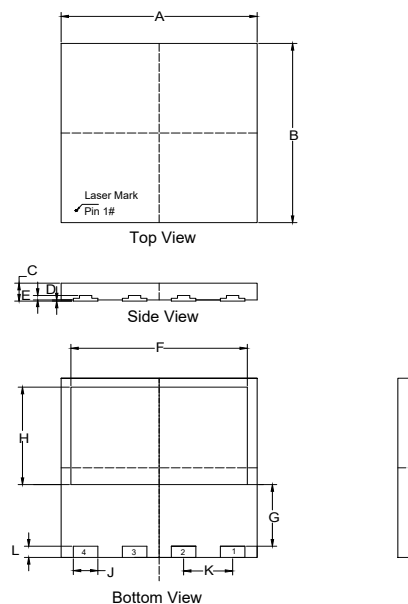
Internal Structure and Marking Code



Pin1

N-CHANNEL MOSFET

DFN8080A



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.311	0.319	7.90	8.10	
B	0.311	0.319	7.90	8.10	
C	0.030	0.037	0.75	0.95	
D	0.000	0.002	0.00	0.05	
E	0.004	0.012	0.10	0.30	
F	0.280	0.287	7.10	7.30	
G	0.104	0.112	2.65	2.85	
H	0.167	0.175	4.25	4.45	
J	0.035	0.043	0.90	1.10	
K	0.079		2.00		BSC
L	0.016	0.024	0.40	0.60	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	600			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 30V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	3	4	V
Drain-Source On-Resistance ^(Note 5)	$R_{DS(on)}$	$V_{GS}=10V, I_D=7.3A$		179	219	m Ω
Gate Resistance	R_g	Drain open, f=1MHz		8		Ω
Diode Characteristics ^(Note 6)						
Continuous Body Diode Current	I_S				20	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=20A$			1.4	V
Reverse Recovery Time	t_{rr}	$I_S=20A, di/dt=100A/\mu s$		347		ns
Reverse Recovery Charge	Q_{rr}			5.3		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		1336		pF
Output Capacitance	C_{oss}			1352		
Reverse Transfer Capacitance	C_{rss}			52		
Total Gate Charge	Q_g	$V_{DS}=480V, V_{GS}=10V, I_D=20A$		36		nC
Gate-Source Charge	Q_{gs}			9		
Gate-Drain Charge	Q_{gd}			14		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=300V, V_{GS}=10V, R_G=25\Omega, I_D=20A$		24		ns
Turn-On Rise Time	t_r			89		
Turn-Off Delay Time	$t_{d(off)}$			212		
Turn-Off Fall Time	t_f			68		

Note 5. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 1\%$.

6. Guaranteed by Design, Not Subject to Production Testing.

Fig. 1 - Typical Output Characteristics

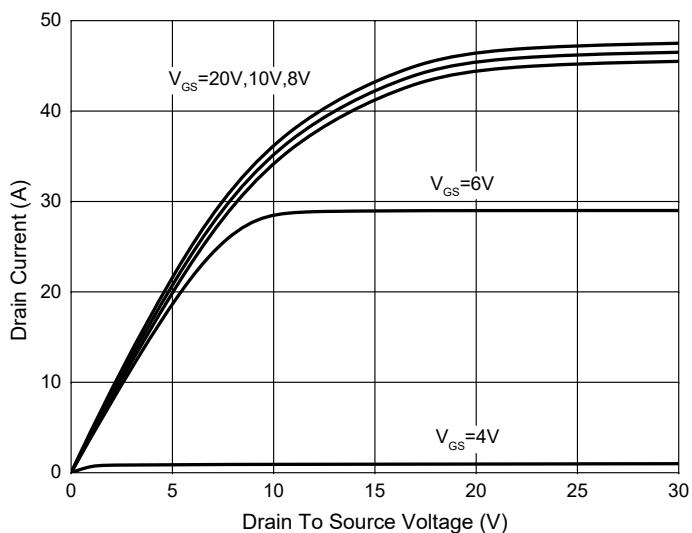


Fig. 2 - Transfer Characteristics

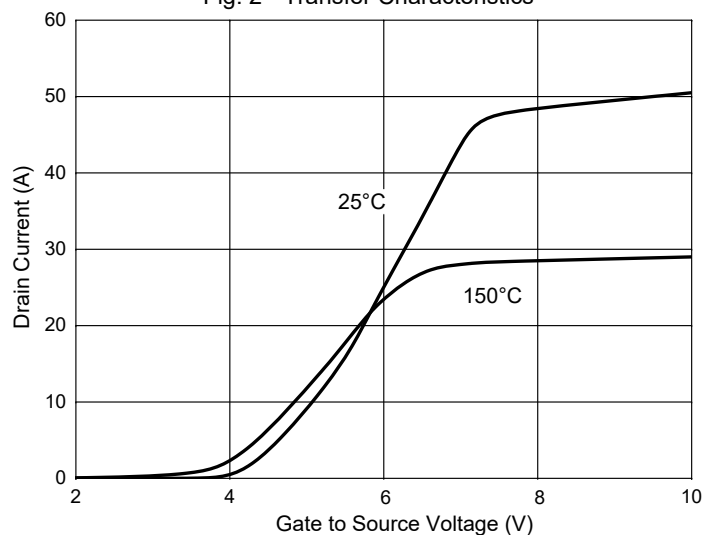


Fig.3- $R_{DS(ON)}-I_D$

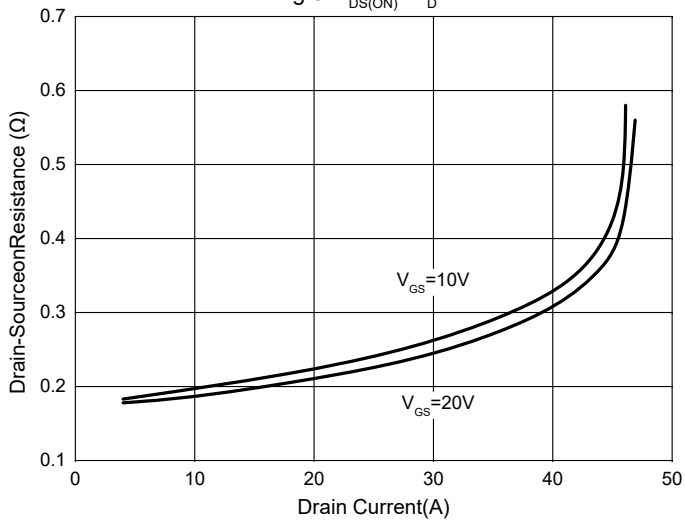


Fig.4 - Normalized On Resistance Characteristics

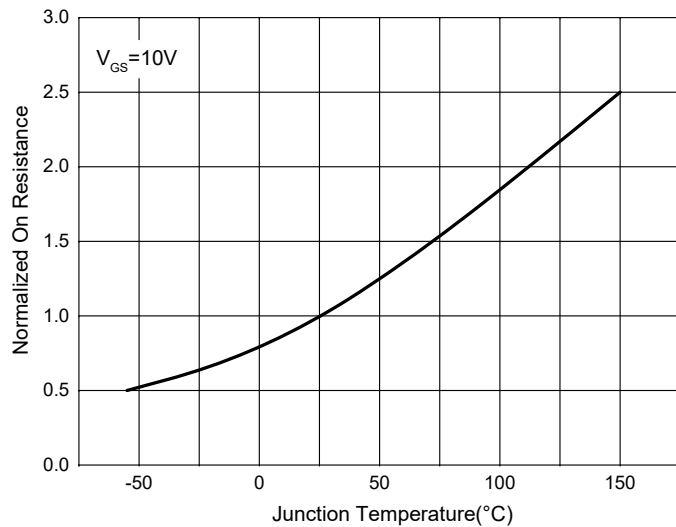


Fig. 5 - Capacitance Characteristics

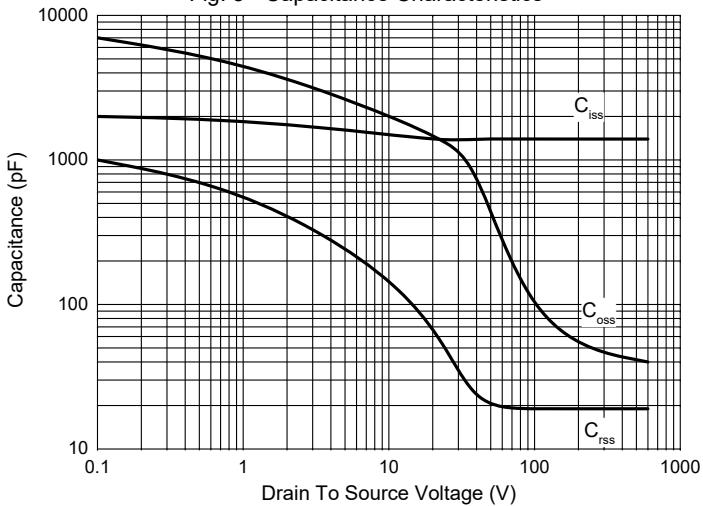


Fig. 6 - Gate Charge

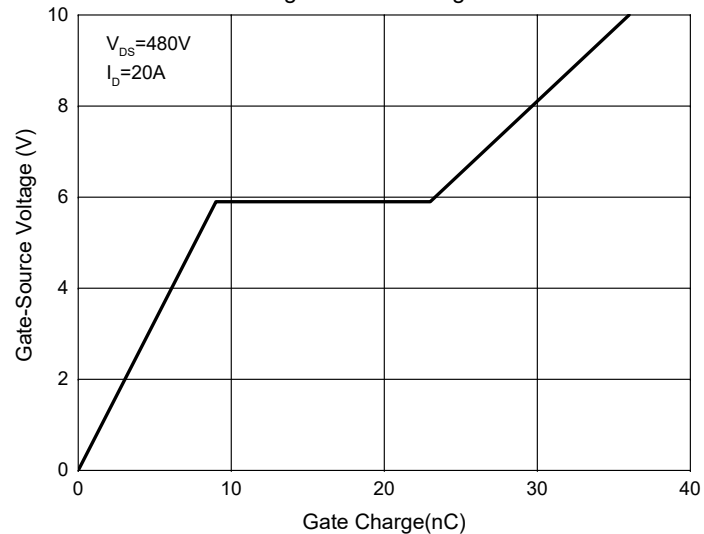


Fig. 7 - $I_s - V_{SD}$

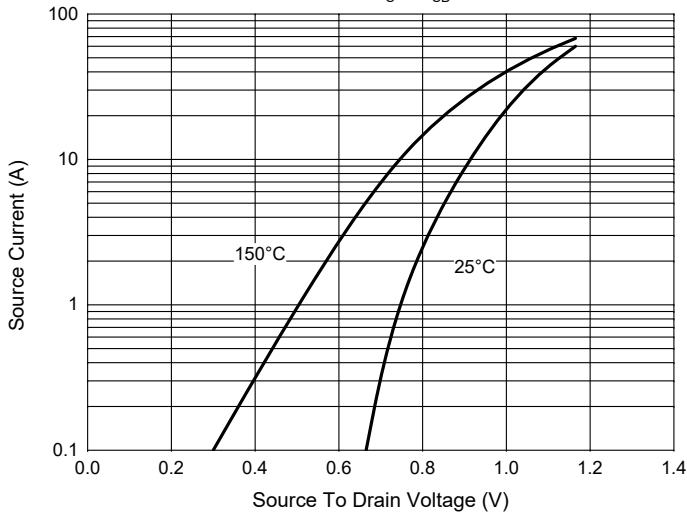


Fig. 8 - Safe Operation Area

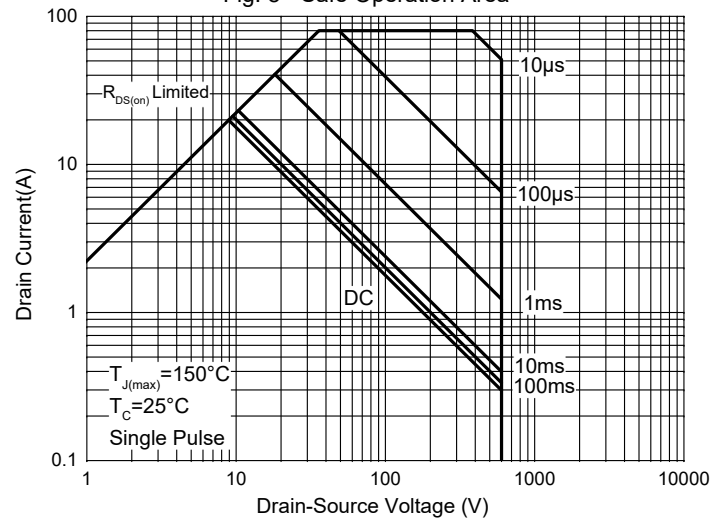
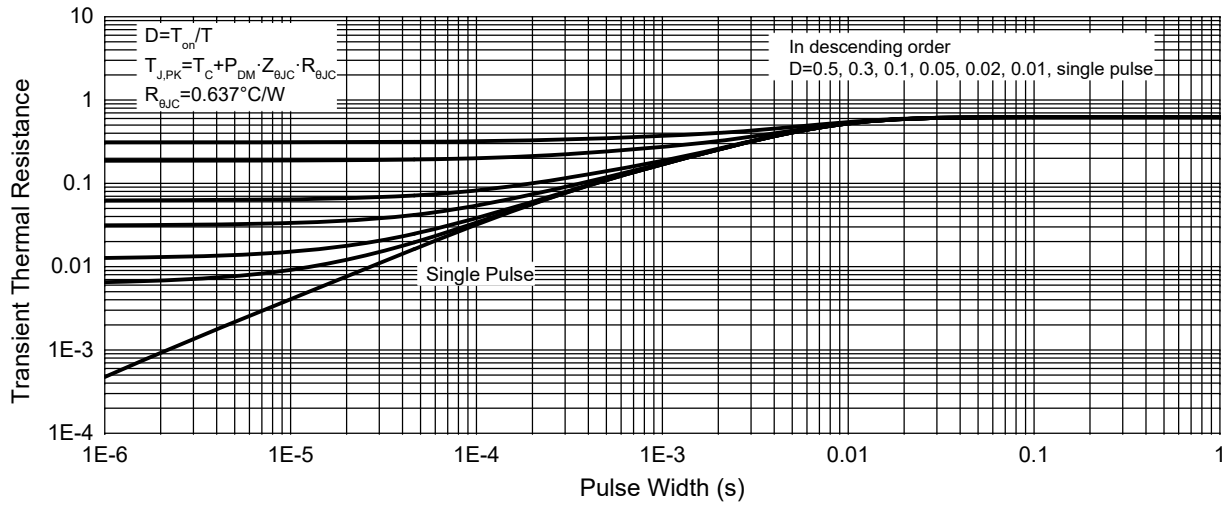


Fig. 9 - Transient Thermal Impedance



Ordering Information

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

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