Features

- Very Low FOM $R_{DS(on)}$ x Qg
- 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 1

N-CHANNEL MOSFET

Maximum Ratings

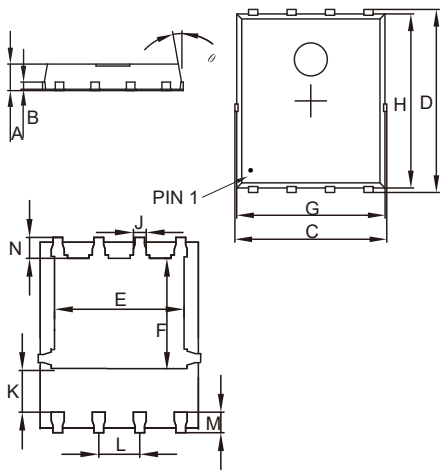
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62.5°C/W Junction to Ambient(Steady-State)
- Thermal Resistance: 1.5°C/W Junction to Case(Steady-State)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	500	V
Gate-Source Volltage	V_{GS}	±30	V
Continuous Drain Current	I_D	11	A
Pulsed Drain Current (2)	I_{DM}	33	A
Total Power Dissipation(3)	P_D	83	W
Single Pulsed Avalanche Energy	E_{AS}	220	mJ

Note:

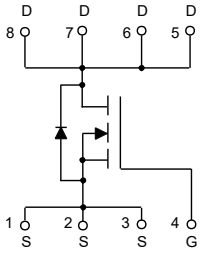
1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. P_D is based on max. junction temperature, using junction-case thermal resistance.

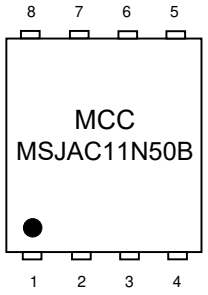
DFN5060



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.031	0.047	0.80	1.20	
B	0.010		0.254		TYP.
C	0.193	0.222	4.90	5.64	
D	0.232	0.250	5.90	6.35	
E	0.148	0.167	3.75	4.25	
F	0.126	0.154	3.20	3.92	
G	0.189	0.213	4.80	5.40	
H	0.222	0.239	5.65	6.06	
K	0.045	0.059	1.15	1.50	
J	0.012	0.020	0.30	0.50	
L	0.046	0.054	1.17	1.37	
M	0.012	0.028	0.30	0.71	
N	0.016	0.028	0.40	0.71	

Internal Structure and Marking Code





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=250μA	500			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±30V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.5	3.0	3.5	V
Drain-Source On-Resistance (Note 4)	$R_{DS(on)}$	V_{GS}=10V, I_D=3.8A		0.35	0.38	Ω
Gate Resistance	R_g	Drain open, f=1Mhz		3.0		Ω
Diode Characteristics (Note 5)						
Continuous Body Diode Current	I_S				11	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=11A			1.4	V
Reverse Recovery Time	t_{rr}	I_S=11A,di/dt=100A/μs		256		ns
Reverse Recovery Charge	Q_{rr}			2.3		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz		702		pF
Output Capacitance	C_{oss}			357		
Reverse Transfer Capacitance	C_{rss}			33.7		
Total Gate Charge	Q_g	V_{DS}=400V,V_{GS}=10V,I_D=11A		21.8		nC
Gate-Source Charge	Q_{gs}			4.8		
Gate-Drain Charge	Q_{gd}			9.7		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=250V, V_{GS}=10V, R_G=25Ω, I_D=11A		15.2		ns
Turn-On Rise Time	t_r			32		
Turn-Off Delay Time	$t_{d(off)}$			59.6		
Turn-Off Fall Time	t_f			28.4		

Note 4. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 1%.

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

Curve Characteristics

Fig. 1 - Typical Output Characteristics

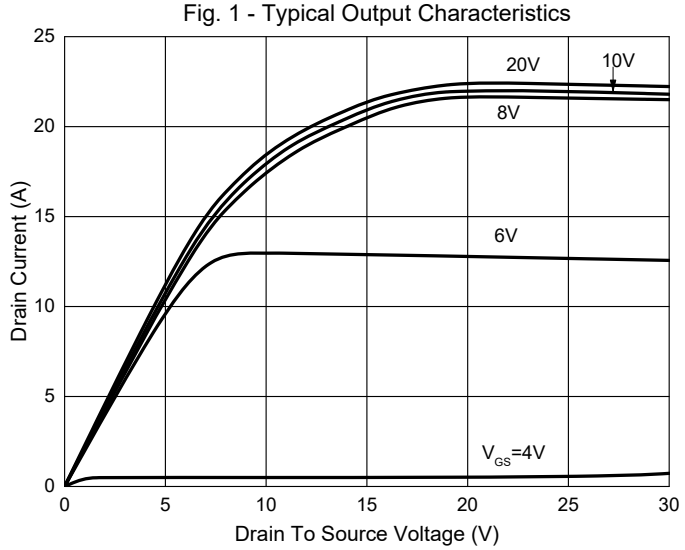


Fig. 2 - Transfer Characteristics

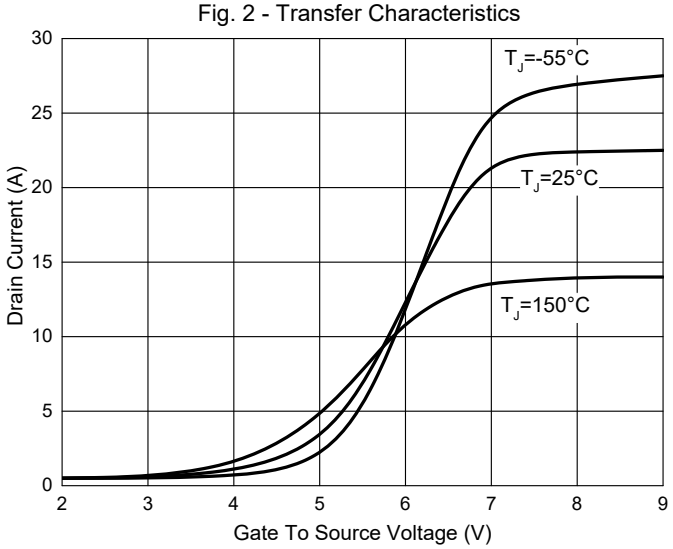


Fig. 3 - $R_{DS(ON)}$—I_D

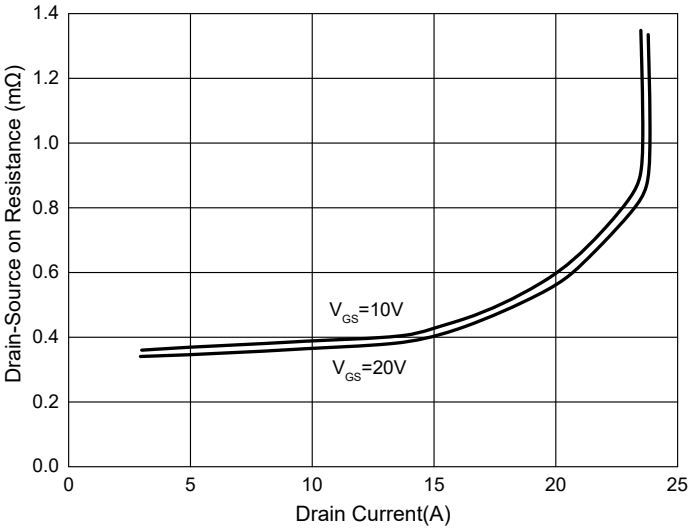


Fig. 4 - Drain-Source on Resistance

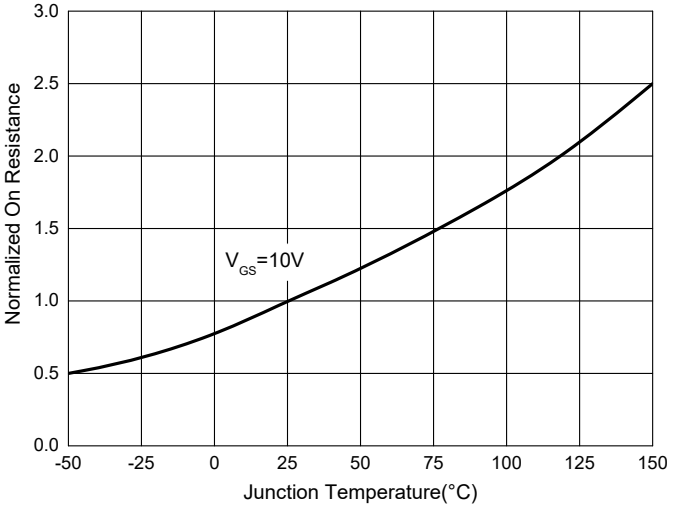


Fig. 5 - Capacitance Characteristics

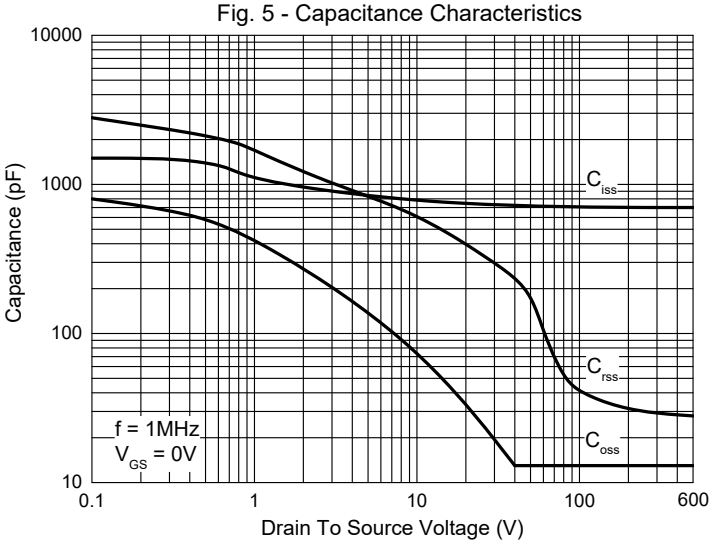
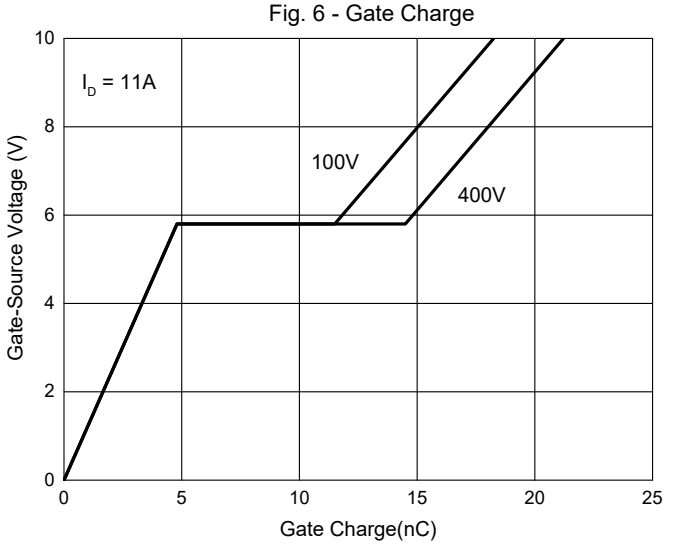


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

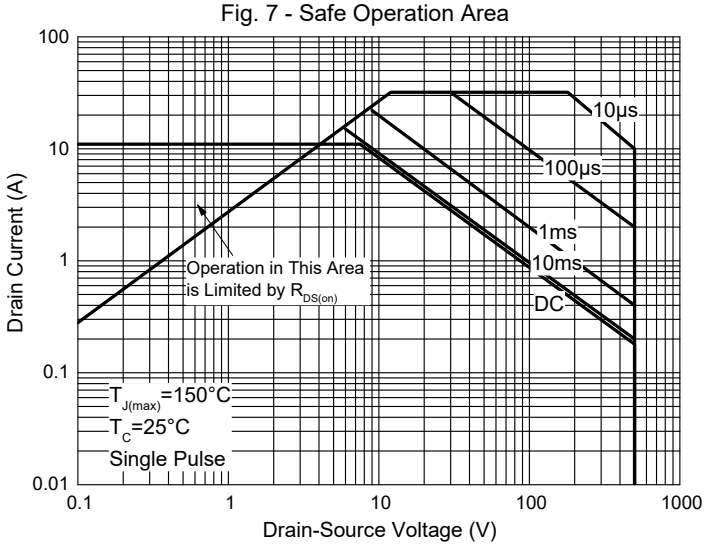
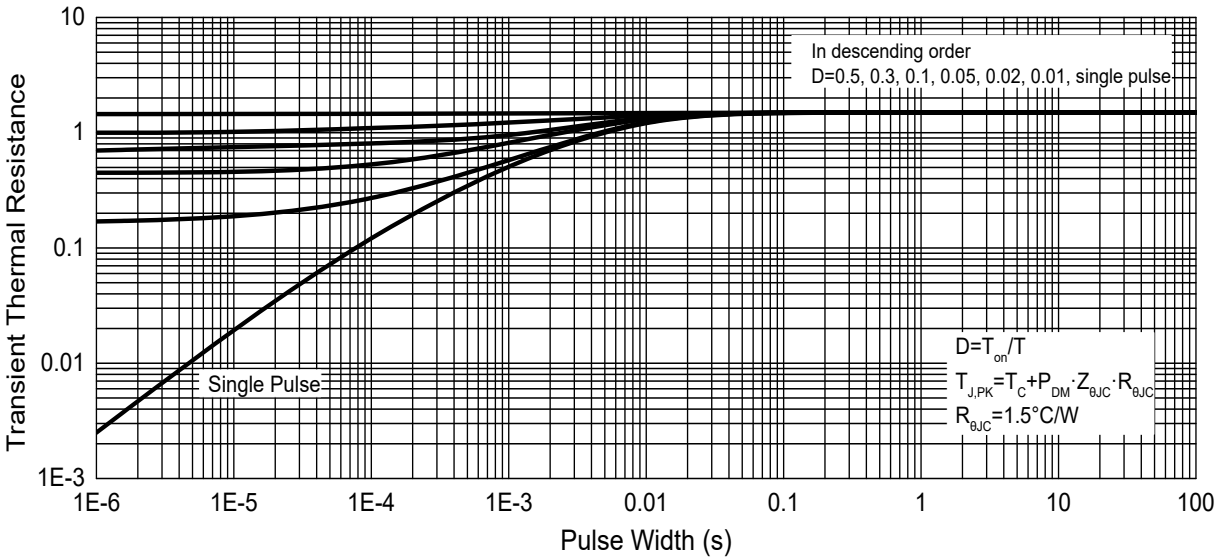


Fig. 8 -Transient Thermal Impedance



Ordering Information

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