Features

- Very Low FOM $R_{DS(on)} \times Q_g$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Moisture Sensitivity Level 1

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 3.6°C/W Junction to Case

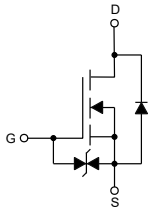
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	800	V
Gate-Source Volltage		V_{GS}	±30	V
Continuous Drain Current		I_D	6	A
Pulsed Drain Current (Note 2)		I_{DM}	18	A
Single Pulse Avalanche Energy (Note 3)		E_{AS}	170	mJ
Total Power Dissipation	T_C=25°C	P_D	35	W

Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

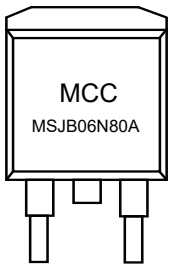
2. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

3. V_{DD}=50V, R_G=25Ω, Starting T_J=25°C .

Internal Structure and Marking Code

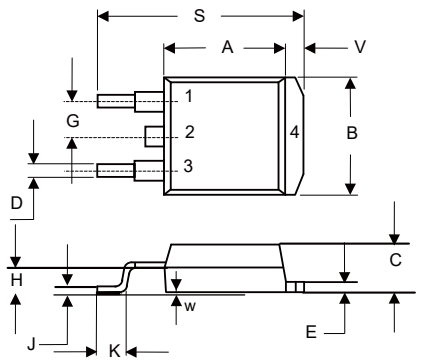


1. Gate
2,4. Drain
3. Source



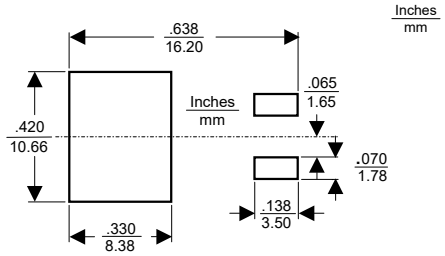
N-CHANNEL Super-Junction Power MOSFET

D²-PAK(TO-263)



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.331	0.370	8.40	9.40	
B	0.378	0.417	9.60	10.60	
C	0.165	0.189	4.20	4.80	
D	0.027	0.037	0.68	0.94	
E	0.045	0.055	1.14	1.40	
G	0.010		2.54		TYP.
H	0.096	0.134	2.43	3.40	
J	0.011	0.025	0.28	0.64	
K	0.071	0.131	1.80	3.32	
S	0.575	0.625	14.60	15.87	
V	0.042	0.058	1.07	1.47	
W	0.000	0.010	0.00	0.25	

Suggested Solder Pad Layout



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	800			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=800V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.5	3.5	4.5	V
Drain-Source On-Resistance(Note 4)	$R_{DS(on)}$	V_{GS}=10V, I_D=2.5A		0.95	1.2	Ω
Gate Resistance	R_G	V_{GS}=0V, f=1.0MHz		21		Ω
Dynamic Characteristics(Note 5)						
Input Capacitance	C_{iss}	V_{DS}=100V,V_{GS}=0V,f=400kHz		349		pF
Output Capacitance	C_{oss}			16		
Reverse Transfer Capacitance	C_{rss}			0.9		
Total Gate Charge	Q_g	V_{DD}=640V,V_{GS}=10V,I_D=4.5A		10.6		nC
Gate-Source Charge	Q_{gs}			3.3		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} =400V, I_D=4.5A,R_G=25Ω		16		ns
Turn-On Rise Time	t_r			24		
Turn-Off Delay Time	$t_{d(off)}$			59		
Turn-Off Fall Time	t_f			19		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	T_C=25°C			6	A
Pulsed Diode Forward Current	I_{SM}				18	
Body Diode Voltage	V_{SD}	I_{SD}=4.5A, V_{GS}=0V			1.4	V
Reverse Recovery Time	t_{rr}	V_{DD}=100V, I_F=I_S,di_F/dt=100A/μs		328		ns
Reverse Recovery Charge	Q_{rr}			2		μC

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

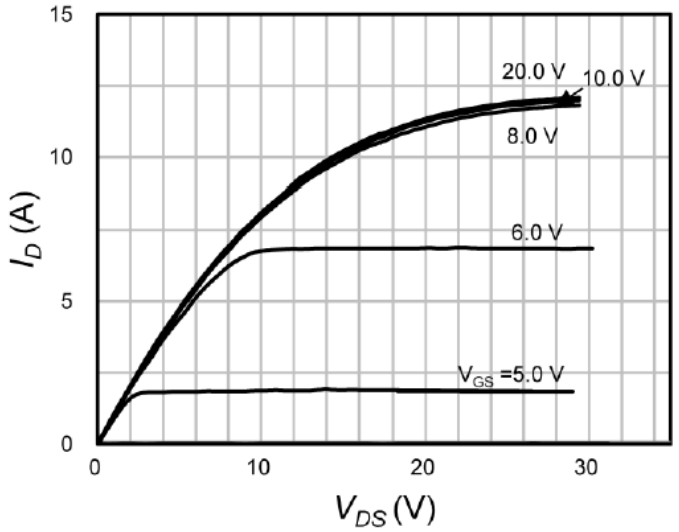


Fig. 2 - Transfer Characteristics

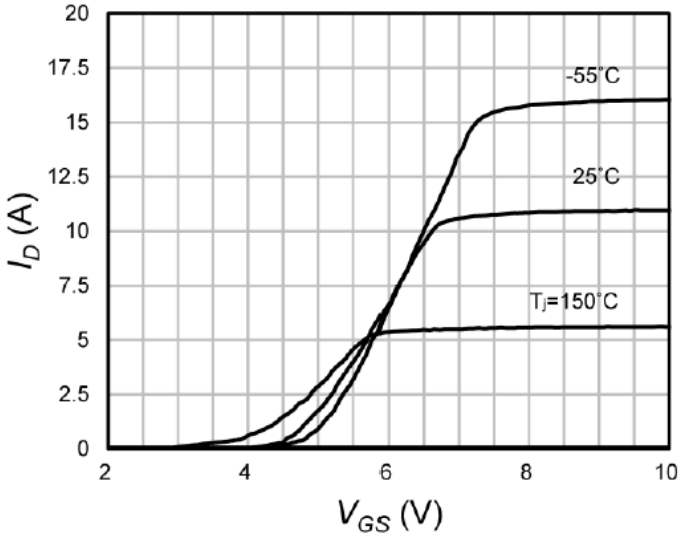


Fig. 3 - $R_{DS(ON)}$—I_D

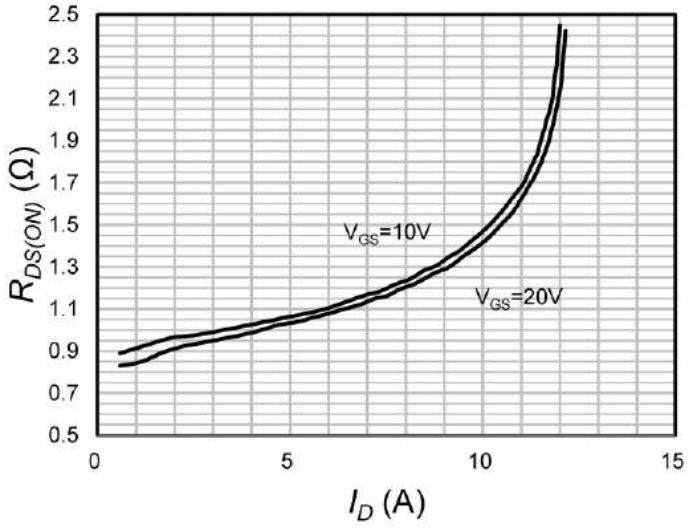


Fig. 4 - $R_{DS(ON)}$—T_J

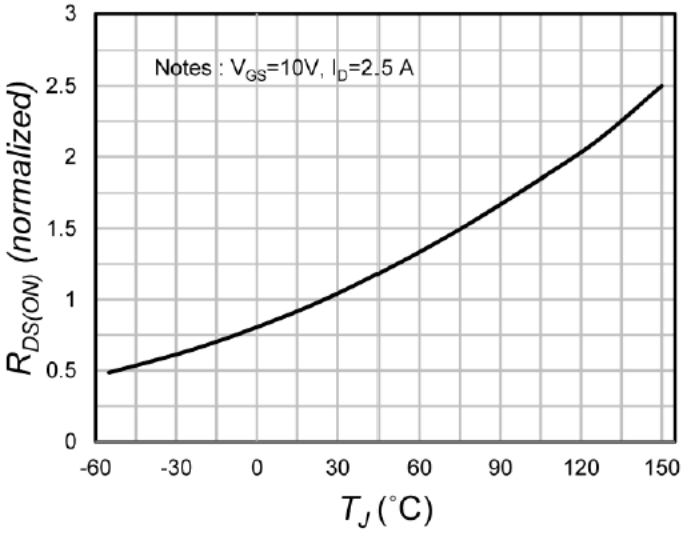


Fig. 5 - Gate Charge

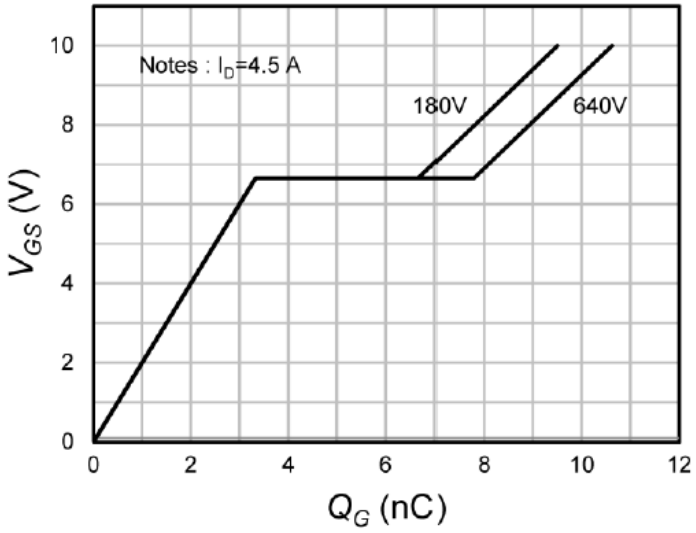
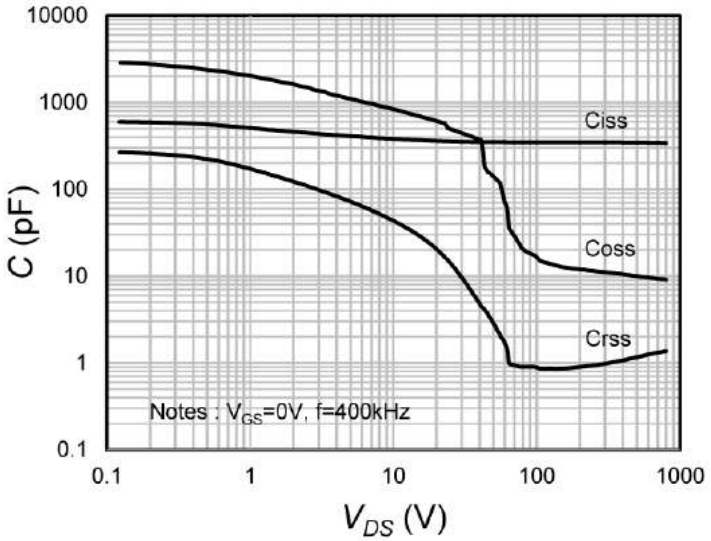


Fig. 6 - Capacitance Characteristics



Curve Characteristics

Fig. 7 - Safe Operation Area

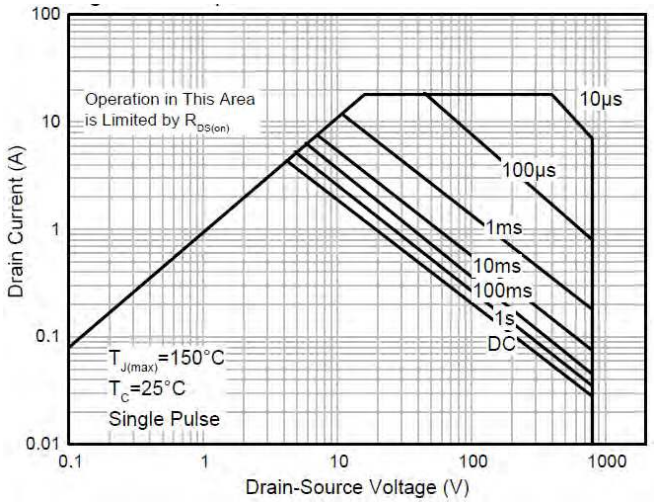
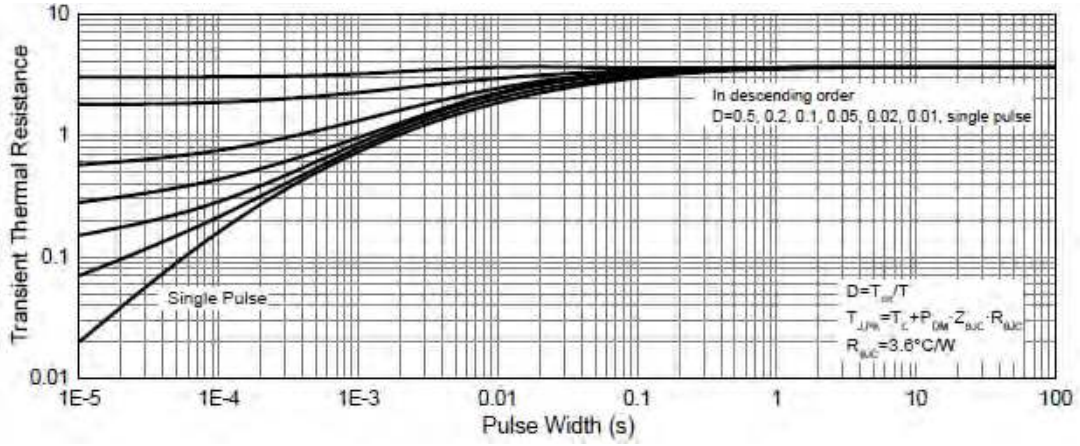


Fig.8 - Maximum Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel