

Features

- Low On-resistance and Low Conduction Loss
- Super Junction technology for High Voltage Application
- Soft Switching with Fast Reverse Recovery Diode
- Ultra Low Gate Charge Cause Lower Driving Requirement
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant^(Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

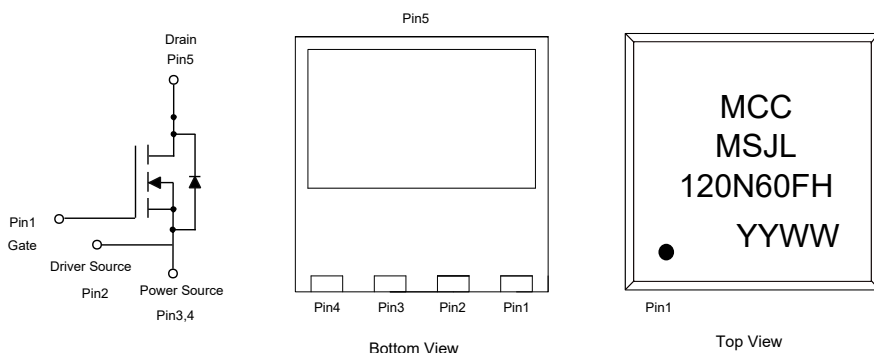
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient (Note3)
- Thermal Resistance: 0.47°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	30	A
	$T_C=100^\circ\text{C}$	19	
Pulsed Drain Current (Note 4)	I_{DM}	120	A
Total Power Dissipation (Note5)	P_D	266	W
Avalanche Energy (Note 6)	E_{AS}	18	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. High temperature solder exemption applied, see EU directive annex 7a.
3. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz.Copper, in a still air environment with $T_A=25^\circ\text{C}$.
4. Repetitive rating; pulse width limited by max. junction temperature.
5. PD is based on max. junction temperature, using junction-case thermal resistance.
6. $T_J=25^\circ\text{C}$, $V_{DD}=50\text{V}$, $I_{AS}=8.5\text{A}$.

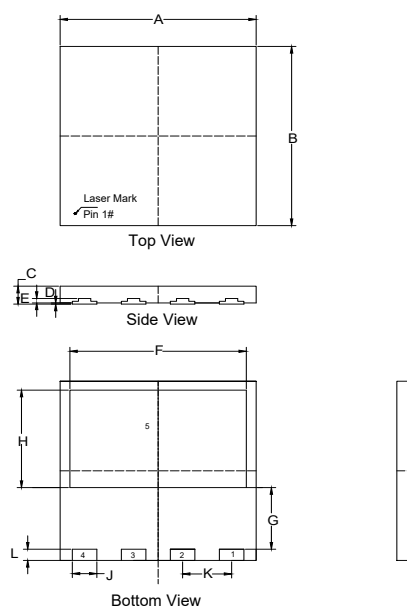
Internal Structure and Marking Code



YYWW: 4 codes in total
YY is the year
WW is the week

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 =1mA	600			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±30V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =600V, V _{GS} =0V			10	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =2.1mA	3	4.3	5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =15.3A		100	120	mΩ
Gate Resistance	R _g	f=1MHz, open drain		1.3		Ω
Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =15.3A		1.0	1.2	V
Reverse Recovery Time	t _{rr}	V _R =400V, I _F =15.3A dI _F /dt=100A/μs		105		ns
Reverse Recovery Charge	Q _{rr}			595		nC
Peak Reverse Recovery Current	I _{rrm}			10		A
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =100V, V _{GS} =0V, f=1MHz		2240		pF
Output Capacitance	C _{oss}			99		
Reverse Transfer Capacitance	C _{rss}			2.8		
Total Gate Charge	Q _g	V _{DS} =400V, V _{GS} =10V, I _D =15.3A		57		nC
Gate-Source Charge	Q _{gs}			15		
Gate-Drain Charge	Q _{gd}			28		
Turn-On Delay Time	t _{d(on)}	V _{DD} =400V, V _{GS} =10V R _G =10Ω, I _D =15.3A		100		ns
Turn-On Rise Time	t _r			35		
Turn-Off Delay Time	t _{d(off)}			65		
Turn-Off Fall Time	t _f			22		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

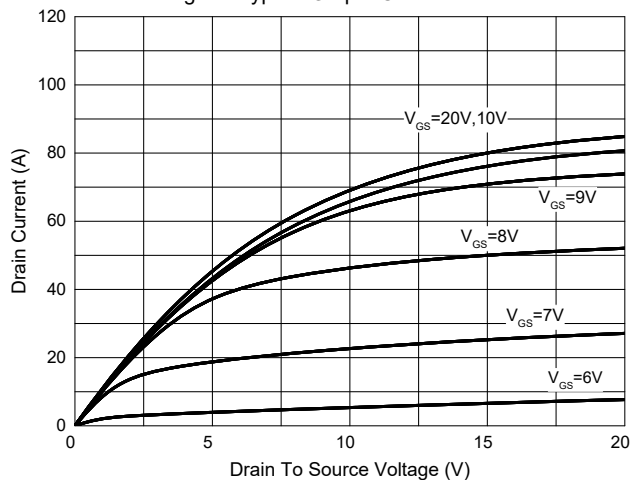


Fig. 2 - Transfer Characteristics

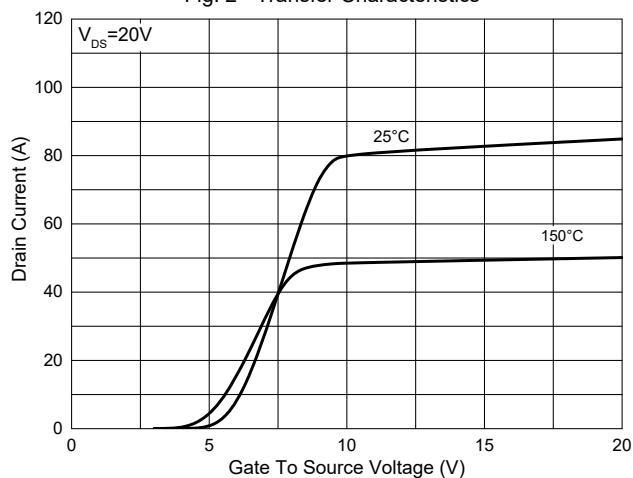


Fig. 3 - $R_{DS(ON)} - V_{GS}$

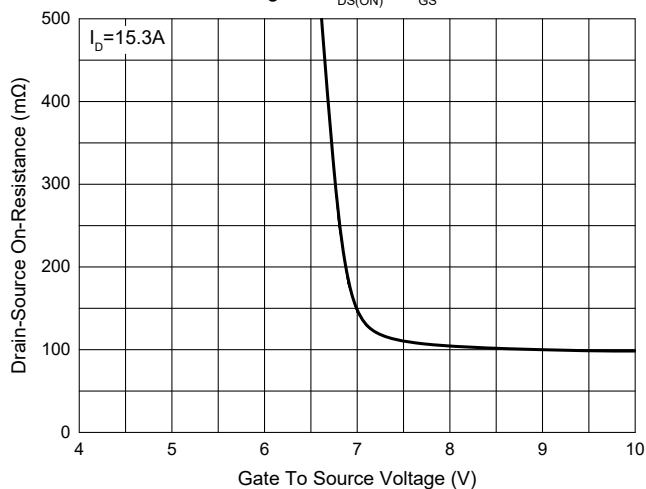


Fig. 4 - $R_{DS(ON)} - I_D$

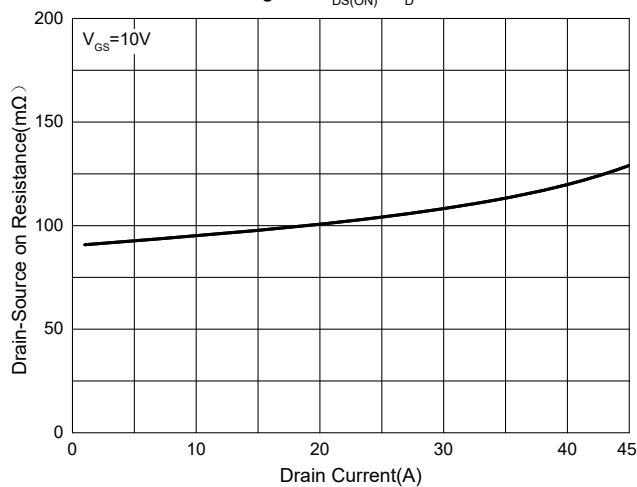


Fig. 5 - Capacitance Characteristics

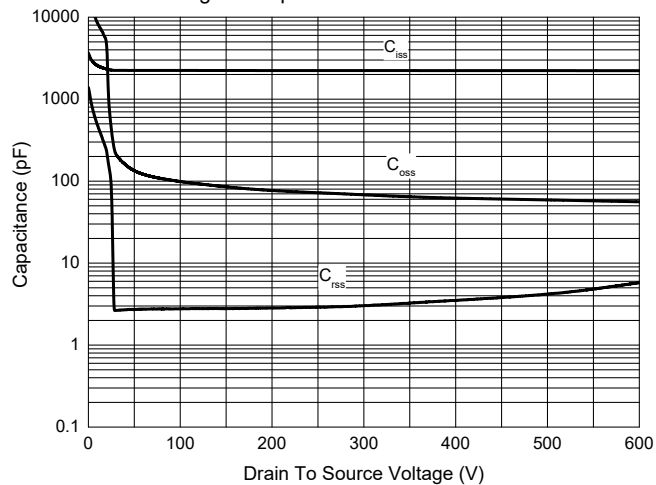
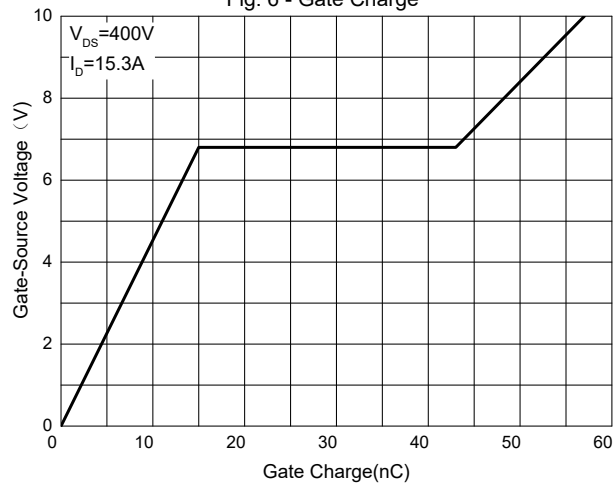


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

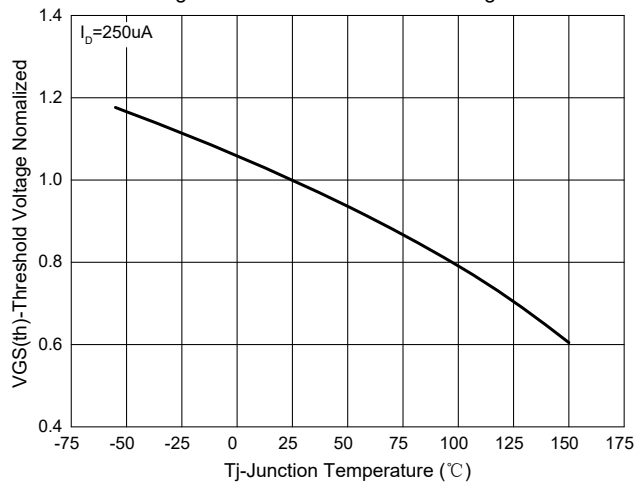


Fig.8-Normalized On Resistance Characteristics

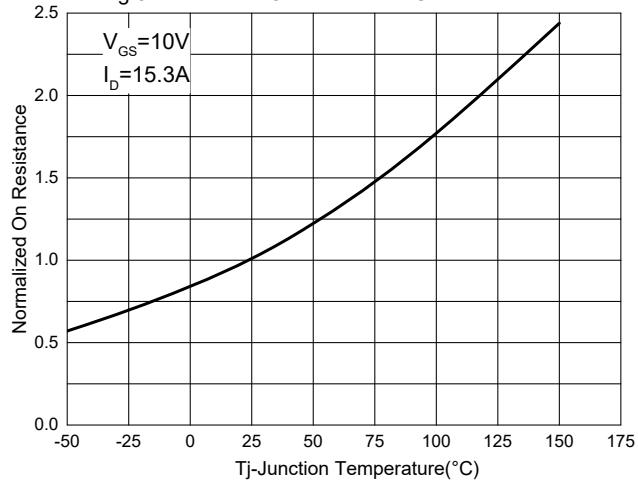


Fig.9 - $I_S - V_{SD}$

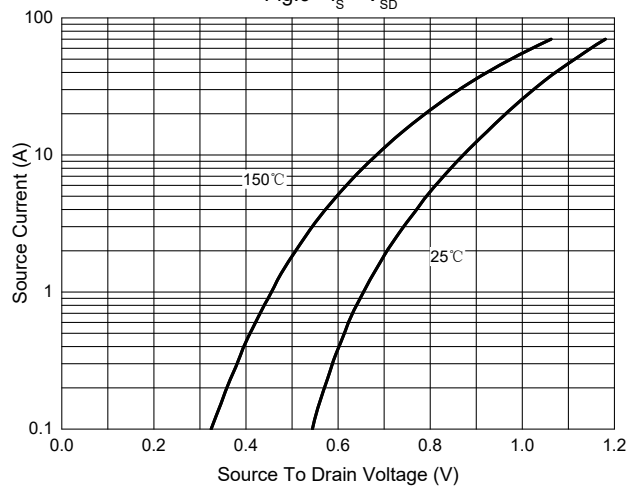


Fig. 10 - Drain Current

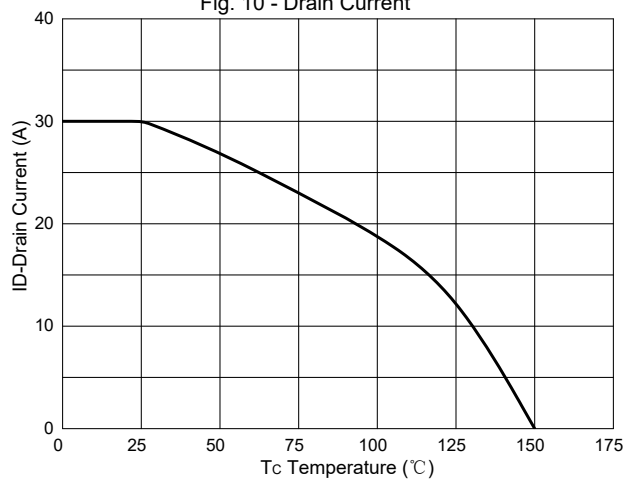
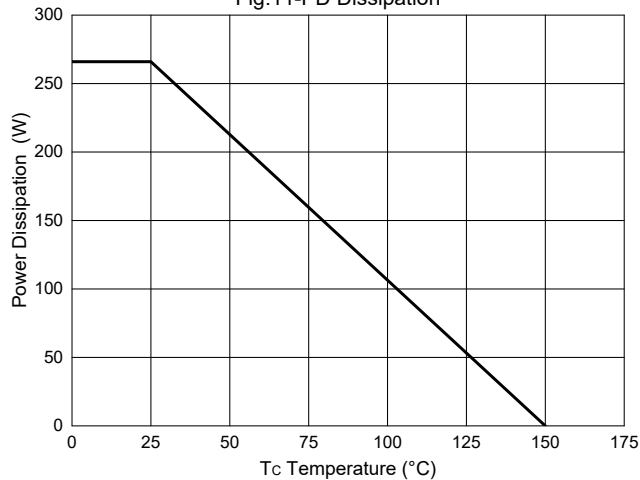
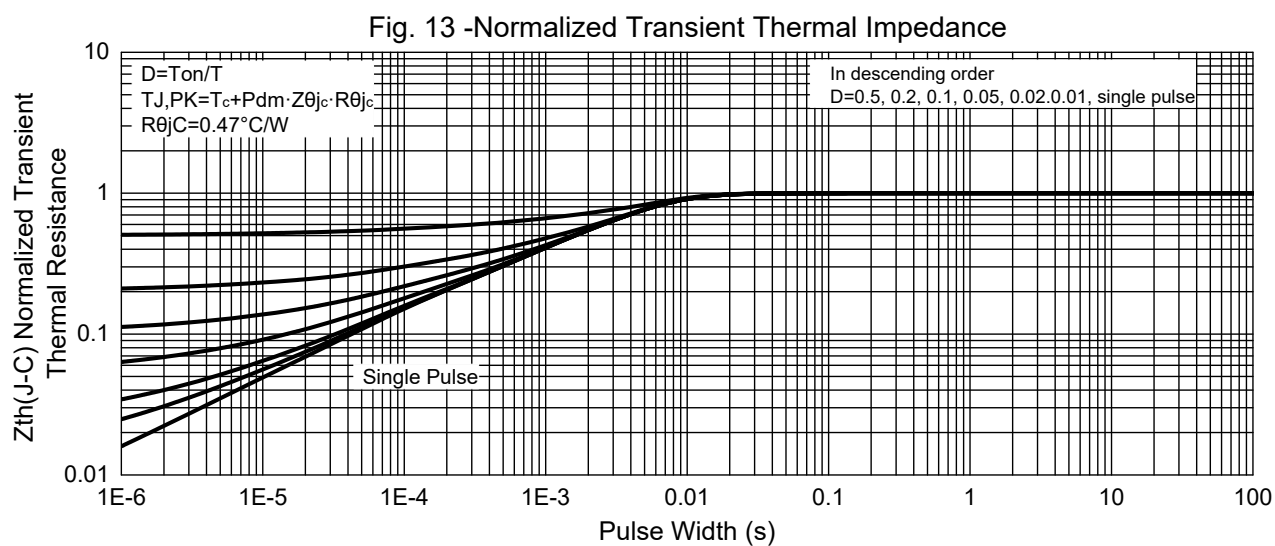
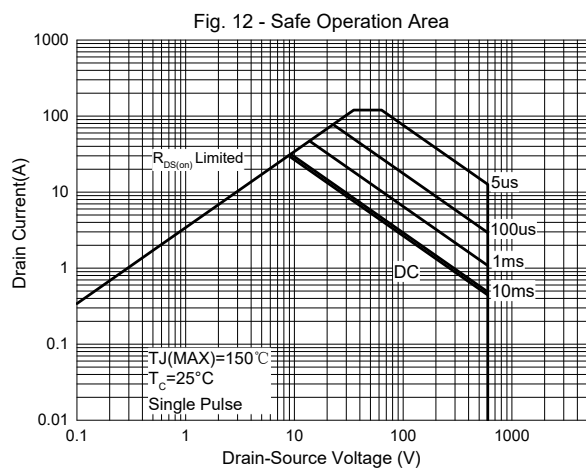


Fig.11-PD Dissipation



Curve Characteristics



Ordering Information

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

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