Features

- Fast Switching
- Improved dv/dt Capability
- Excellent Package for Good Heat Dissipation
- Moisture Sensitivity Level 1
- Halogen Free."Green" (Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-CHANNEL MOSFET

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance:1.5°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Volltage		V_{GS}	±30	V
Continuous Drain Current	T_C=25°C	I_D	9	A
	T_C=100°C		5.83	A
Pulsed Drain Current (Note 2)		I_{DM}	36	A
Single Pulse Avalanche Energy (Note 3)		E_{AS}	320	mJ
Peak Diode Recovery Energy(Note 4)		dV/dt	5	V/ns
Total Power Dissipation		P_D	83	W

Note:

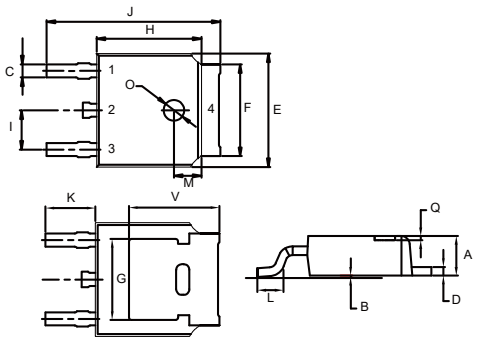
1.Halogen free"Green"products are defined as those which contain ＜900ppm bromine,＜900ppm chlorine （＜1500ppm total Br + Cl)and ＜1000ppm antimony conpounds.

2.Pulse Width Limited by Maximum Junction Temperature.

3.L=10mH, I_{AS}=8A, V_{DD}=50V, R_G=25Ω, Starting T_J=25°C

4.I_{SD}≤9A, di/dt≤200A/μs, V_{DD}≤BV_{DSS}, Starting T_J=25°C.

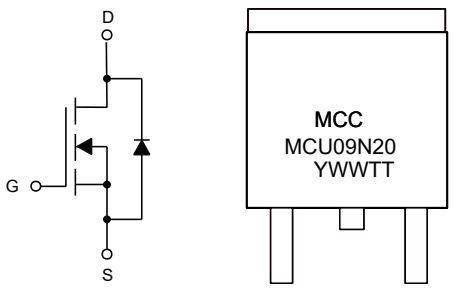
DPAK(TO-252)



1. Gate
2,4. Drain
3. Source

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

Internal Structure and Marking Code



YWWTT: 5 codes in total
Y is the year
WW is the cycle
TT is the line type

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	200			V
Breakdown Voltage Temperature Coefficient	$\triangle V_{(BR)DSS}$ /$\triangle T_J$	Reference to 25°C, I_D= 250μA		0.25		V/°C
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±30V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=200V, V_{GS}=0V			1	μA
		V_{DS}=160V, V_{GS}=0V, T_C=125°C			10	
Gate-Threshold Voltage(Note 5)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1	1.9	3	V
Drain-Source On-Resistance(Note 5)	$R_{DS(on)}$	V_{GS}=10V, I_D=4.5A		0.21	0.25	Ω
Forward Tranconductance(Note 5)	g_{FS}	V_{DS}=30V, I_D=4.5A		9.2		S
Dynamic Characteristics(Note 6)						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz		509		pF
Output Capacitance	C_{oss}			51.5		
Reverse Transfer Capacitance	C_{rss}			3.2		
Total Gate Charge	Q_g	V_{DD}=160V,V_{GS}=10V,I_D=9A		11.8		nC
Gate-Source Charge	Q_{gs}			2.36		
Gate-Drain Charge	Q_{gd}			3.98		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=100V, I_D=9A, R_G=10Ω, V_{GS}=10V		10.33		ns
Turn-On Rise Time	t_r			10.7		
Turn-Off Delay Time	$t_{d(off)}$			29.1		
Turn-Off Fall Time	t_f			11.1		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	T_C=25°C			9	A
Pulsed Diode Forward Current	I_{SM}				36	
Body Diode Voltage	V_{SD}	I_S=9A, V_{GS}=0V			1.4	V
Reverse Recovery Time	t_{rr}	V_{GS}=0V, I_F=9A,di/dt=100A/μs		201		ns
Reverse Recovery Charge	Q_{rr}			663		nC

Note 5. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤2%.

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

Curve Characteristics

Fig. 1 - Output Characteristics

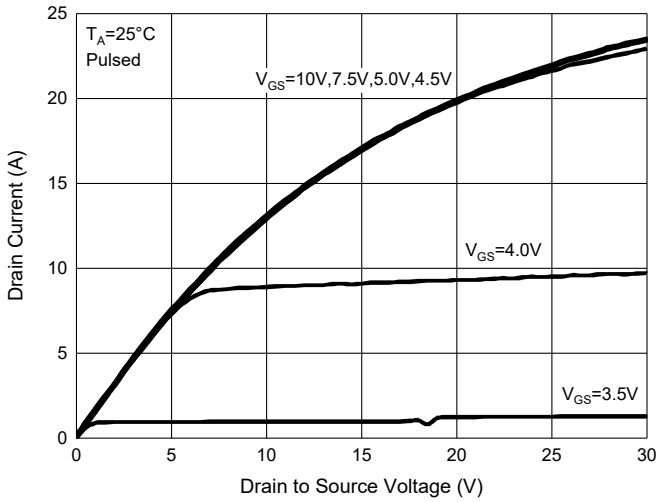


Fig. 2 - Transfer Characteristics

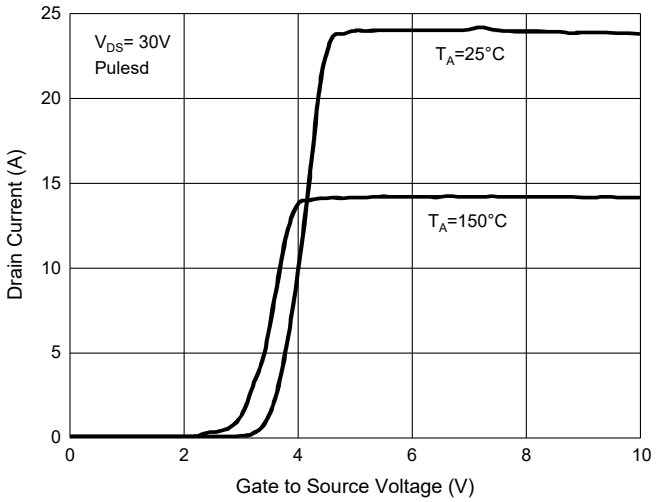


Fig. 3 - $R_{DS(ON)}$—I_D

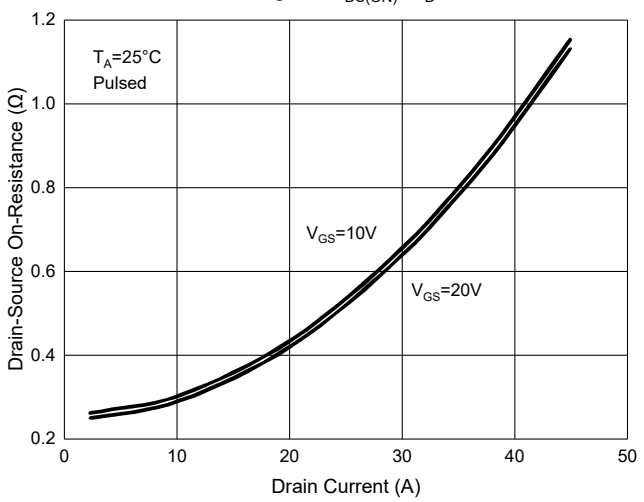


Fig. 4 - I_S—V_{SD}

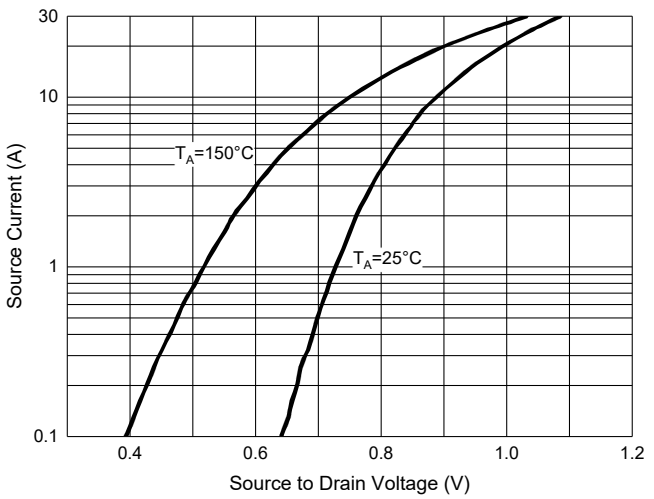


Fig. 5 - Capacitance Characteristics

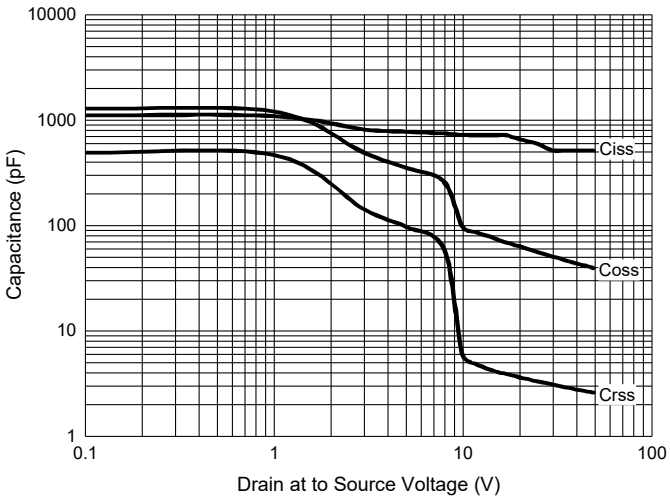
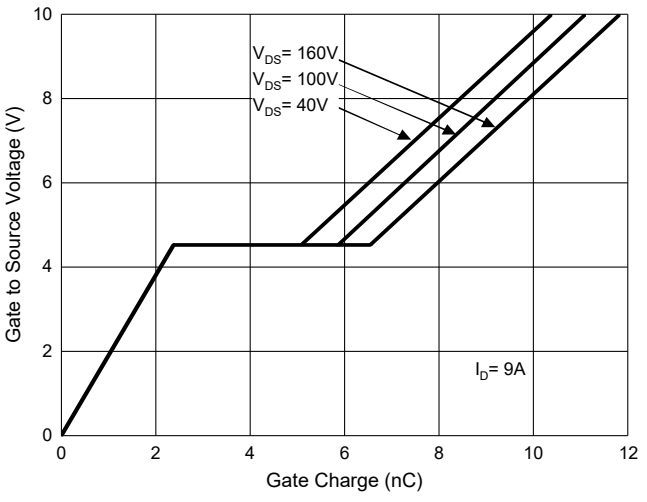


Fig. 6 - Gate Charge



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel