

**Features**

- Excellent Gate Charge x  $R_{DS(on)}$  Product(FOM)
- Very Low On-Resistance  $R_{DS(on)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

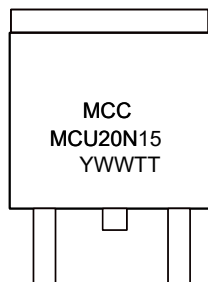
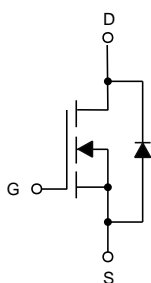
- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 2.2°C/W Junction to Case<sup>(Note 1)</sup>

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	150	V	
Gate-Source Voltage	$V_{GS}$	±20	V	
Continuous Drain Current	$I_D$	$T_C=25^\circ C$	20	A
		$T_C=100^\circ C$	14	A
Pulsed Drain Current	$I_{DM}$	80	A	
Single Pulse Avalanche Energy <sup>(Note 2)</sup>	$E_{AS}$	65	mJ	
Total Power Dissipation	$P_D$	68	W	

Note: 1. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

2. EAS Condition :  $T_J=25^\circ C, V_{DD}=50V, V_G=10V, L=0.5mH, R_g=25\Omega$ .

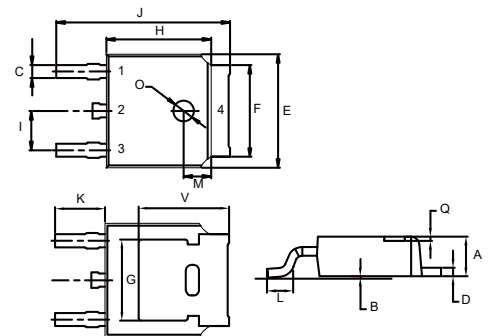
⚠️ **Warranty Information**



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

**N-CHANNEL  
MOSFET**

**DPAK(TO-252)**



- 1. Gate
- 2,4. Drain
- 3. Source

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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.

**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	150			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=150V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage <sup>(Note 3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5	3.3	4.5	V
Drain-Source On-Resistance <sup>(Note 3)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		59	65	m $\Omega$
Forward transconductance <sup>(Note 3)</sup>	$g_{FS}$	$V_{DS}=5V, I_D=10A$	15			S
<b>Dynamic Characteristics<sup>(Note 4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=75V, V_{GS}=0V, f=1MHz$		600		pF
Output Capacitance	$C_{oss}$			74.7		
Reverse Transfer Capacitance	$C_{rss}$			10.8		
Total Gate Charge	$Q_g$	$V_{DS}=75V, V_{GS}=10V, I_D=10A$		12		nC
Gate-Source Charge	$Q_{gs}$			5.7		
Gate-Drain Charge	$Q_{gd}$			2.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=75V, R_L=7.5\Omega$ $V_{GS}=10V, R_G=3\Omega$		9.5		ns
Turn-On Rise Time	$t_r$			5.5		
Turn-Off Delay Time	$t_{d(off)}$			12.5		
Turn-Off Fall Time	$t_f$			3		
<b>Drain-Source Body Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$	$T_C=25^\circ C$			20	A
Body Diode Voltage <sup>(Note 3)</sup>	$V_{SD}$	$I_{SD}=10A, V_{GS}=0V$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F=I_S, di/dt=100A/\mu s$		29		ns
Reverse Recovery Charge	$Q_{rr}$				130	

 Note 3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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

Curve Characteristics

Fig. 1 - Typical Output Characteristics

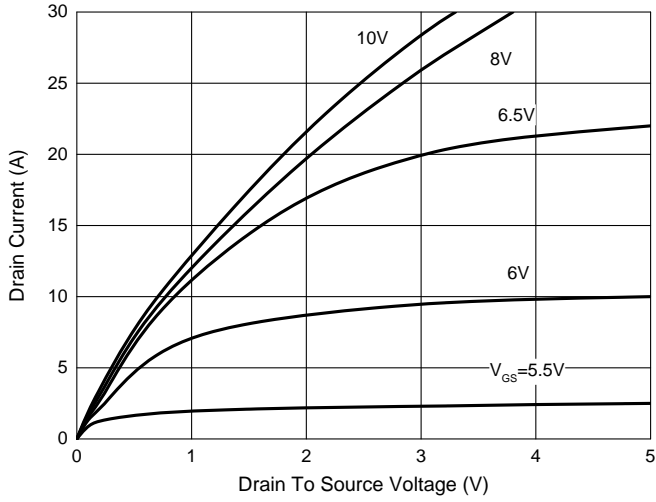


Fig. 2 - Transfer Characteristics

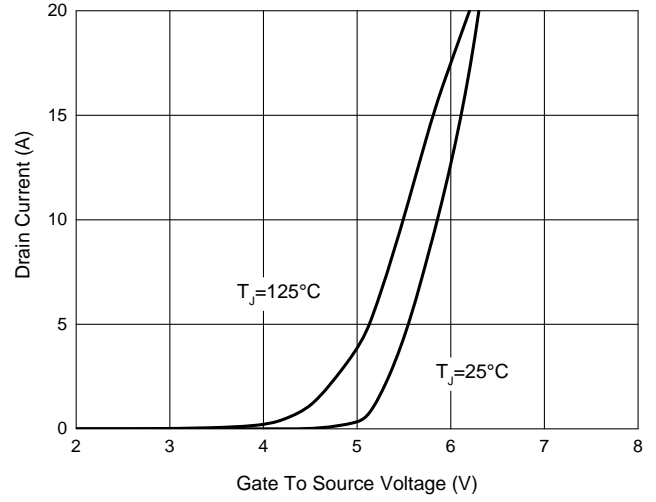


Fig. 3 - Capacitance Characteristics

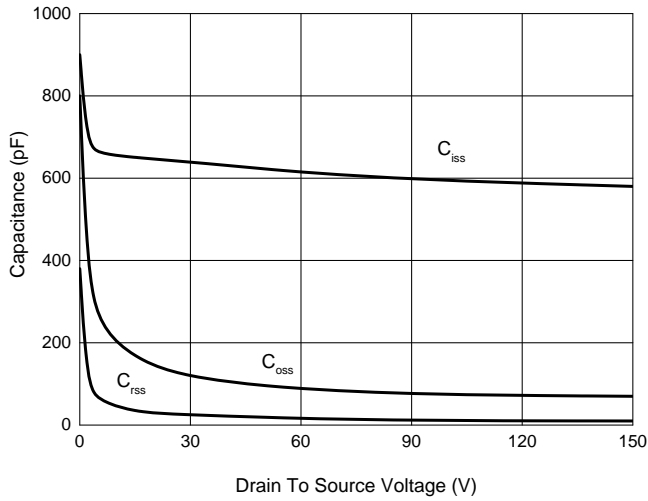


Fig. 4 - Gate Charge Characteristics

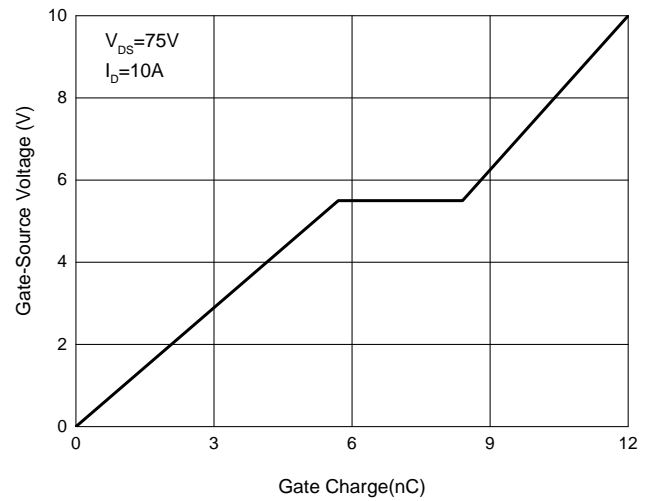


Fig. 5 - R<sub>DS(ON)</sub> - I<sub>D</sub>

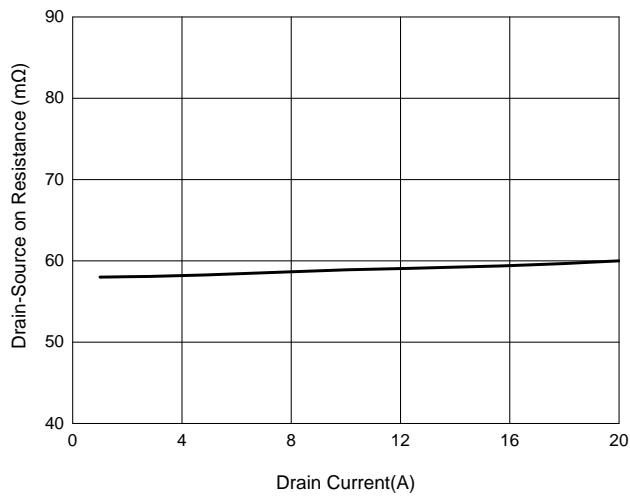
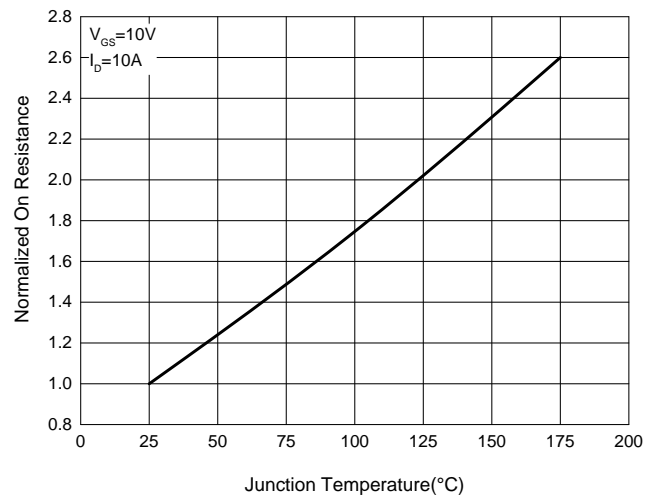


Fig. 6 - Normalized On Resistance Characteristics



## Ordering Information

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

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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