Features

- Advanced Trench Process Technology
- High Density Cell Design for Ultra Low On-Resistance
- Reliable and Rugged
- Moisture Sensitivity Level 1
- 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)

P-CHANNEL MOSFET

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 1.79°C/W Junction to Case (Note 2)

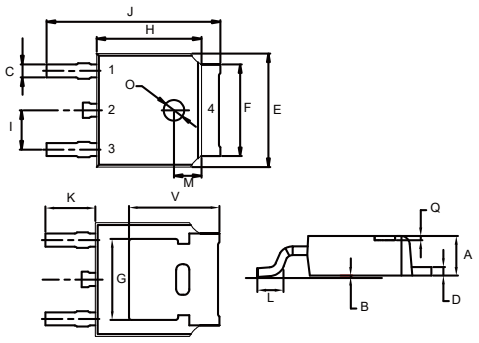
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	-20	A
	T_C=100°C		-12	A
Pulsed Drain Current		I_{DM}	-72	A
Single Pulsed Avalanche Energy(Note 3)		E_{AS}	225	mJ
Total Power Dissipation		P_D	70	W

Note:

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

   The value of $R_{\theta JA}$ is measured with the device mounted on 1 in ^{2} FR-4 board with 2oz. copper, in a still air environment with T_A=25°C.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. L=0.5mH, VDD=-50V, VG=-10V,RG=25Ω,Starting TJ=25°C.

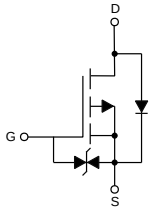
DPAK(TO-252)

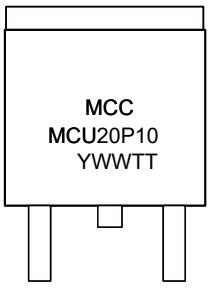


1. Gate
2,4. Drain
3. Source

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	-100			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±20	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage(Note 4)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1	-1.9	-3	V
Drain-Source On-Resistance(Note 4)	$R_{DS(on)}$	V_{GS}=-10V, I_D=-16A	85	100	116	mΩ
Forward Tranconductance(Note 4)	g_{FS}	V_{DS}=-50V, I_D=-10A	5			S
Dynamic Characteristics(Note 5)						
Input Capacitance	C_{iss}	V_{DS}=-25V,V_{GS}=0V,f=1MHz		2100		pF
Output Capacitance	C_{oss}			590		
Reverse Transfer Capacitance	C_{rss}			140		
Total Gate Charge	Q_g	V_{DS}=-80V,V_{GS}=-10V,I_D=-16A		61		nC
Gate-Source Charge	Q_{gs}			14		
Gate-Drain Charge	Q_{gd}			29		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-50V,I_D=-16A V_{GS}=-10V,R_{GEN}=9.1Ω		16		ns
Turn-On Rise Time	t_r			73		
Turn-Off Delay Time	$t_{d(off)}$			34		
Turn-Off Fall Time	t_f			57		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	T_C=25°C			-18	A
Body Diode Voltage	V_{SD}	I_S=-10A, V_{GS}=0V			-1.2	V
Reverse Recovery Time	t_{rr}	I_F=-16A,di/dt=100A/μs		88.3		ns
Reverse Recovery Charge	Q_{rr}			65.9		nC
Forward Turn-on Time	t_{on}	Intrinsic Turn-On Time is Negligible(Turn-On is Dominated by L_S+L_D)				

Note 4. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤2%.

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

Curve Characteristics

Fig. 1 - Typical Output Characteristics

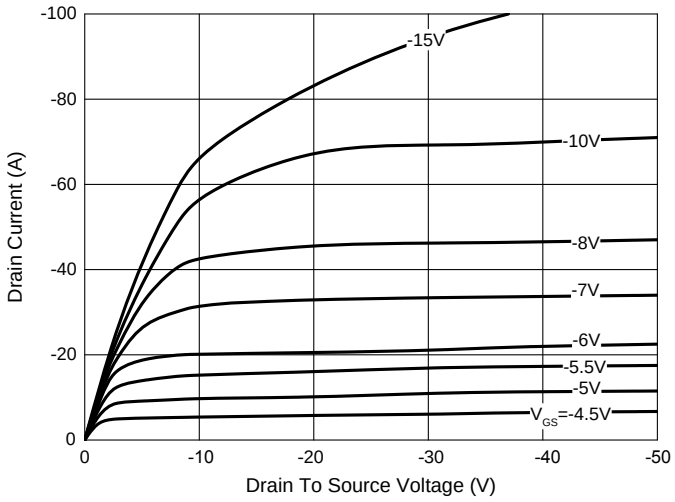


Fig. 2 - $R_{DS(ON)}$—Temperature

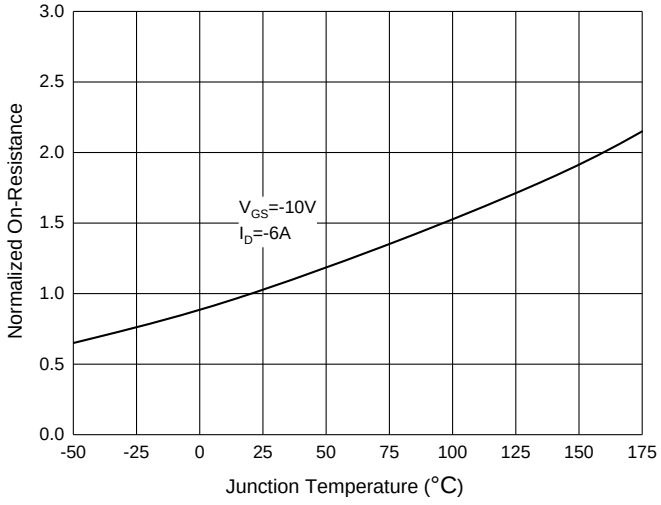


Fig. 3 - $R_{DS(ON)}$—I_D

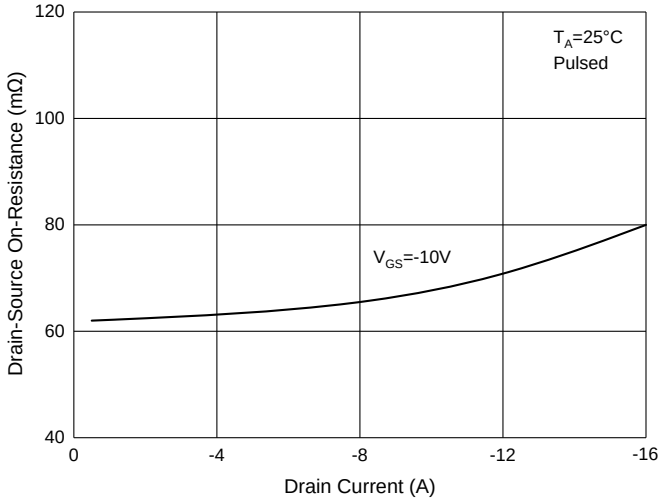


Fig. 4 - Total Gate Charge Characteristics

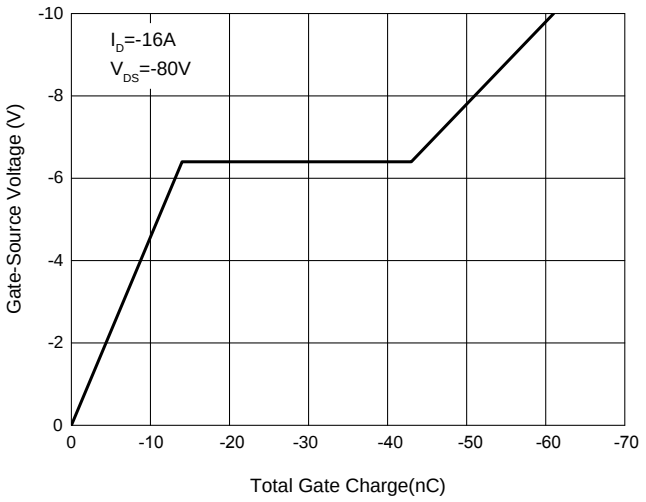
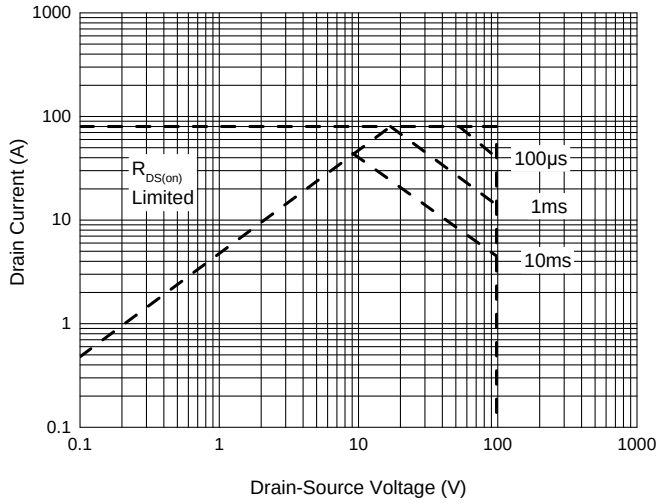


Fig. 5 - Safe Operation Area



Ordering Information

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