

Features

- High Density Cell Desihn for Ultra Low $R_{DS(on)}$
- Fully Characterized Avalanche Voltage and Current
- Good Stability and Uniformity with High E_{AS}
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- 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: 0.847°C/W Junction to Case

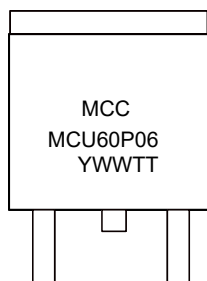
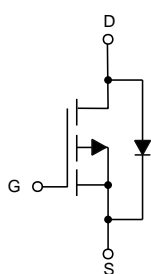
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-60	V
Gate-Source Voltlage		V _{GS}	±20	V
Continuous Drain Current	T _C =25°C	I _D	-60	A
	T _C =100°C		-42.3	A
Pulsed Drain Current		I _{DM}	-260	A
Single Pulse Avalanche Energy ^(Note 2)		E _{AS}	722	mJ
Total Power Dissipation		P _D	177	W

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. $T_J=25^\circ\text{C}$, $V_{DD}=-30\text{V}$, $V_{GS}=-10\text{V}$, $L=0.5\text{mH}$, $R_g=25\Omega$.

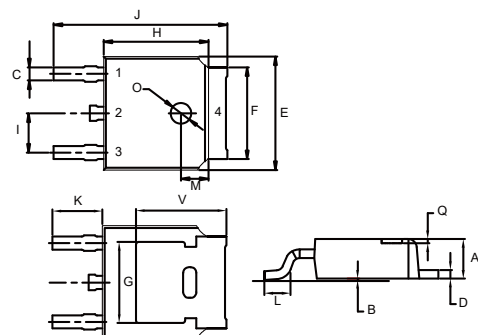
Internal Structure and Marking Code



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

P-CHANNEL MOSFET

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.

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	-60			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage ^(Note 3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-2	-2.6	-3.5	V
Drain-Source On-Resistance ^(Note 3)	R _{DS(on)}	V _{GS} =-10V, I _D =-20A		13	18	mΩ
Forward Tranconductance ^(Note 3)	g _{FS}	V _{DS} =-5V, I _D =-20A		25		S
Dynamic Characteristics ^(Note 4)						
Input Capacitance	C _{iss}	V _{DS} =-25V,V _{GS} =0V,f=1MHz		5814		pF
Output Capacitance	C _{oss}			483		
Reverse Transfer Capacitance	C _{rss}			234		
Total Gate Charge	Q _g	V _{DS} =-30V,V _{GS} =-10V,I _D =-20A		75		nC
Gate-Source Charge	Q _{gs}			16		
Gate-Drain Charge	Q _{gd}			19		
Reverse Recovery Chrage	Q _{rr}	I _S =-20A, di/dt=-100A/μs		71		
Reverse Recovery Time	t _{rr}			49		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-30V, R _L =1.5Ω, V _{GS} =-10V,R _G =3Ω		18		ns
Turn-On Rise Time	t _r			20		
Turn-Off Delay Time	t _{d(off)}			55		
Turn-Off Fall Time	t _f			35		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I _S	T _C =25°C			-60	A
Body Diode Voltage	V _{SD}	I _{SD} =-20A, V _{GS} =0V			-1.2	V

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 - Output Characteristics

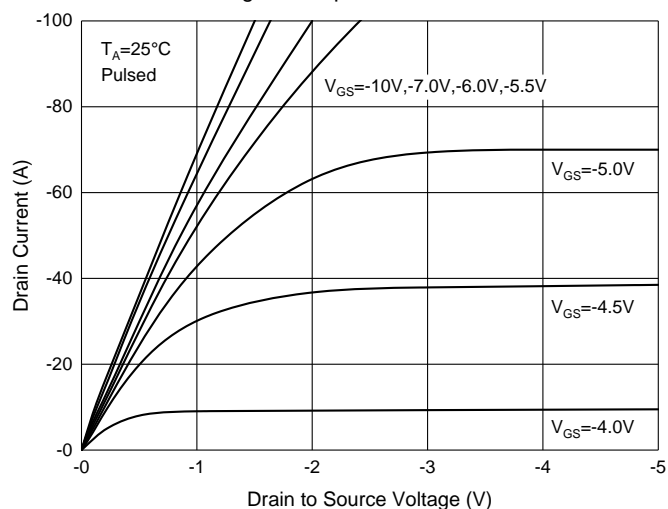


Fig. 2 - Transfer Characteristics

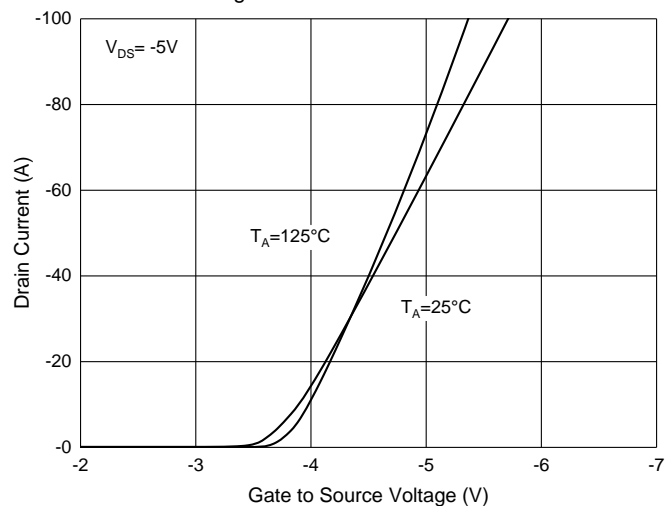


Fig. 3 - $R_{DS(ON)} - I_D$

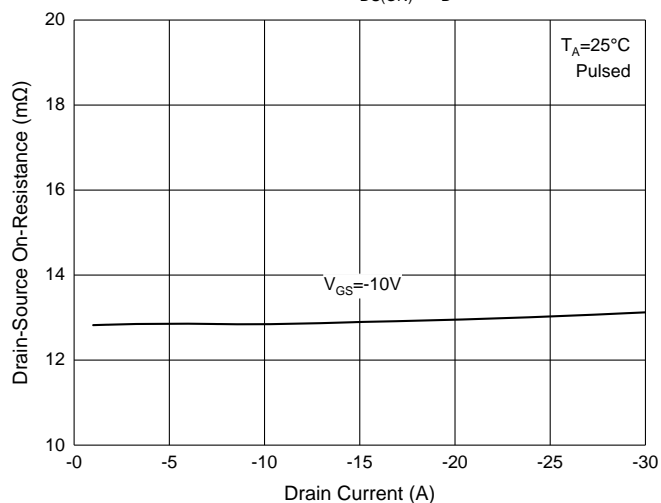


Fig. 4 - $R_{DS(ON)}$ - Temperature

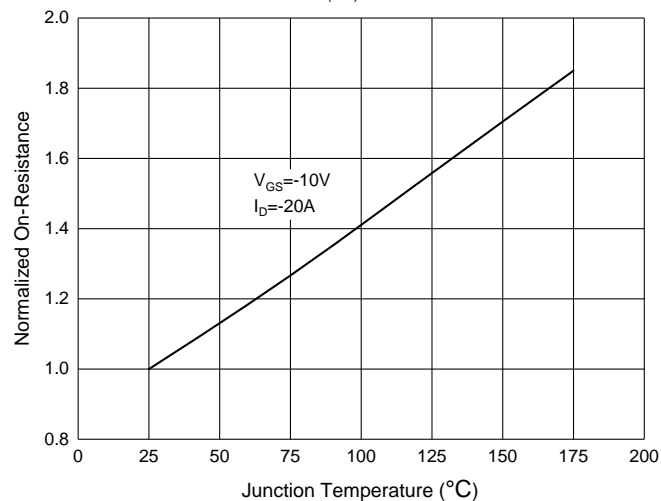


Fig. 5 - Gate Charge

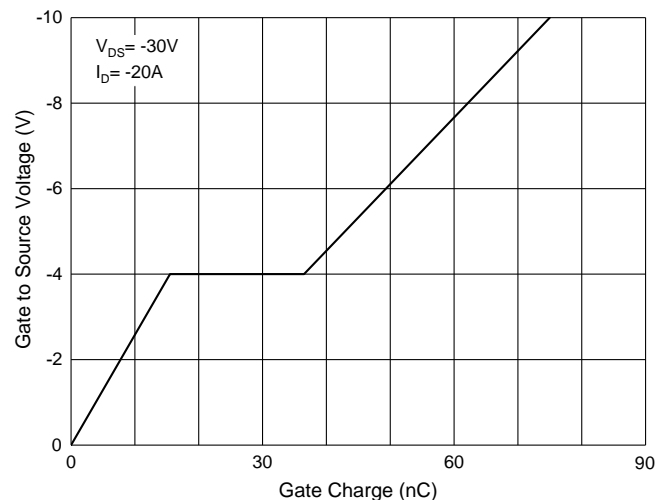
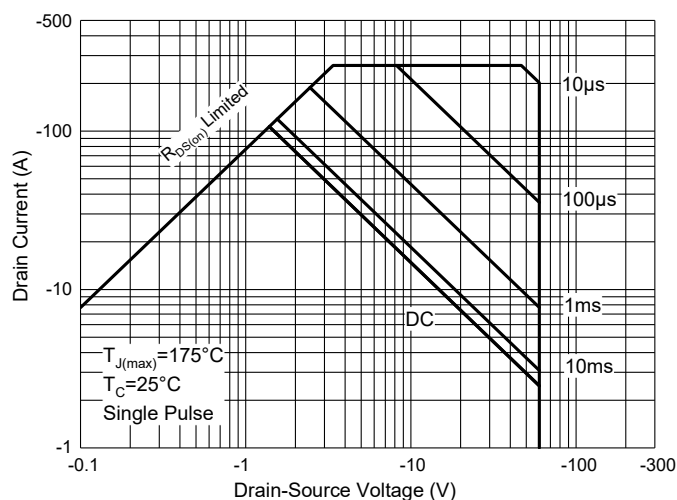
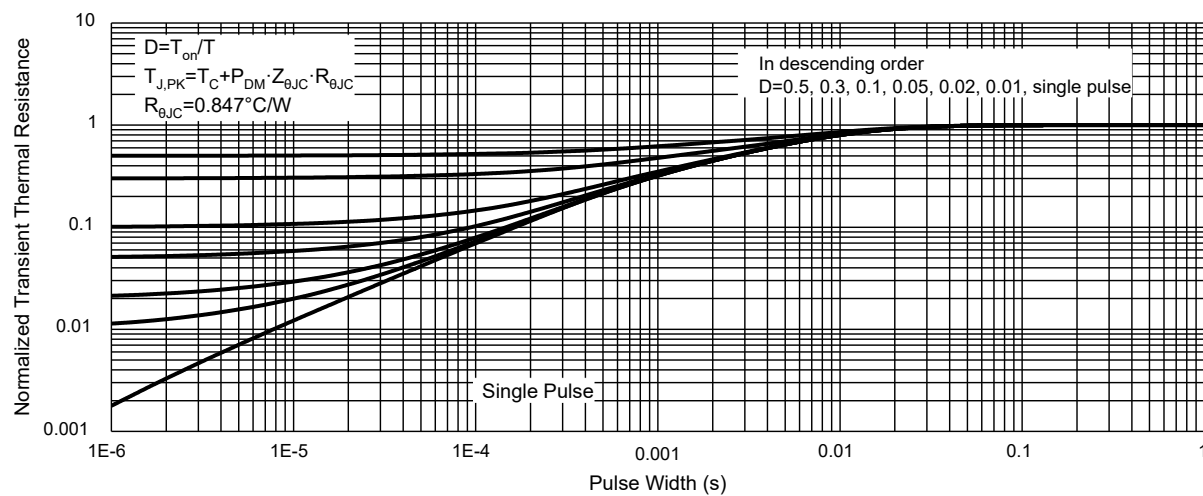


Fig. 6 - Safe Operation Area



Curve Characteristics

Fig. 7 - Normalized Transient Thermal Impedance



Ordering Information

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

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