

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"

Maximum Ratings

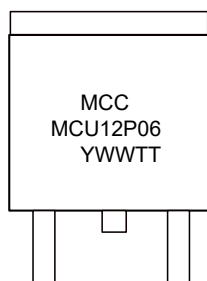
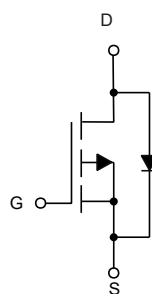
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 3.13°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^(Note 1)	I_D	-12	A
Pulsed Drain Current ^(Note 2)	I_{DM}	-30	A
Total Power Dissipation	P_D	40	W

Notes: 1.Surface Mounted on FR4 Board Using the Minimum Recommended Pad Size.

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

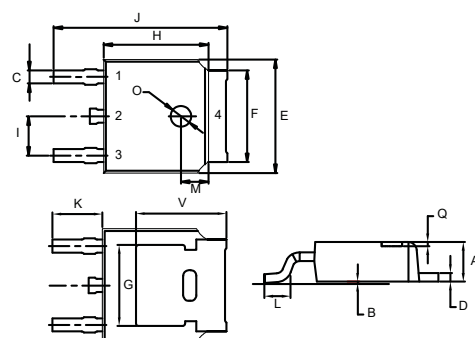
Internal Structure and Marking Code



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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 2)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.5	-3	V
Drain-Source On-Resistance ^(Note 2)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-3.1A$		60	80	m Ω
		$V_{GS}=-4.5V, I_D=-0.2A$		92	100	
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-2A$			1.2	V
Forward Transconductance ^(Note2)	g_{FS}	$V_{DS}=-15V, I_D=-3.1A$		8.5		S
Dynamic Characteristics^(Note 3)						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		650		pF
Output Capacitance	C_{oss}			95		
Reverse Transfer Capacitance	C_{rss}			60		
Gate Resistance	R_g	$f=1MHz$			20	Ω
Switching Characteristics^(Note 3,4)						
Total Gate Charge	Q_g	$V_{DD}=-30V, V_{GS}=-4.5V, I_D=-3.1A$			12	nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			3.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-30V, V_{GEN}=-4.5V, I_D=-2.4A$ $R_L=12.5\Omega, R_G=1\Omega$			45	ns
Turn-On Rise Time	t_r				105	
Turn-Off Delay Time	$t_{d(off)}$				60	
Turn-Off Fall Time	t_f				45	

Note 3. Switching Characteristics are Independent of Operating Junction Temperature.

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

Curve Characteristics

Fig. 1 - Output Characteristics

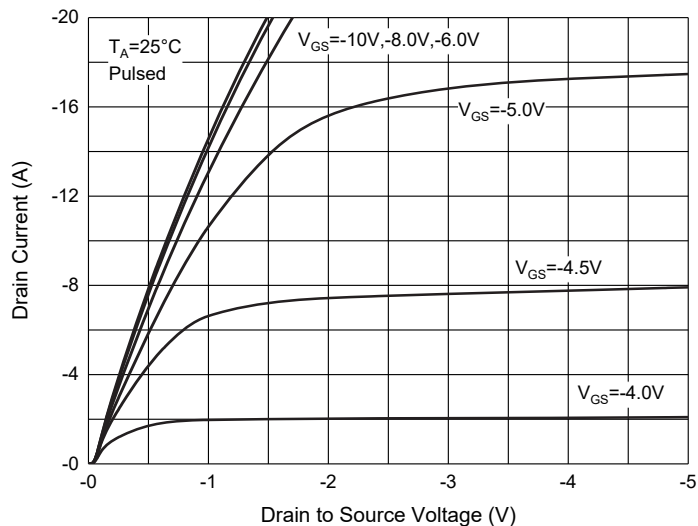


Fig. 2 - Transfer Characteristics

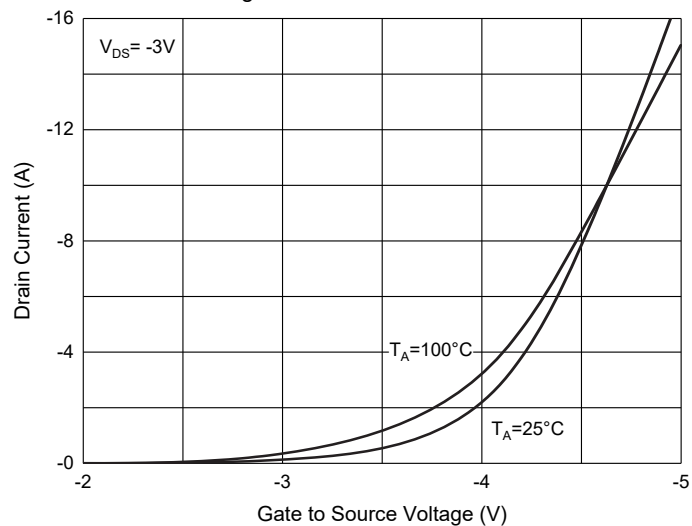


Fig. 3 - $R_{DS(ON)} - I_D$

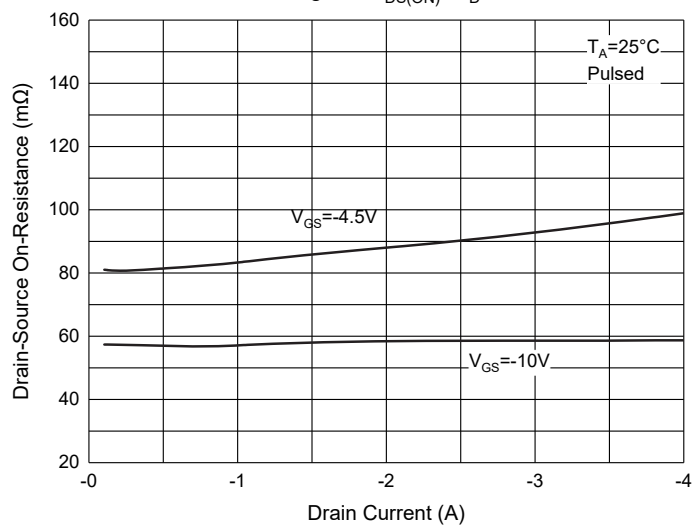


Fig. 4 - $R_{DS(ON)} - V_{GS}$

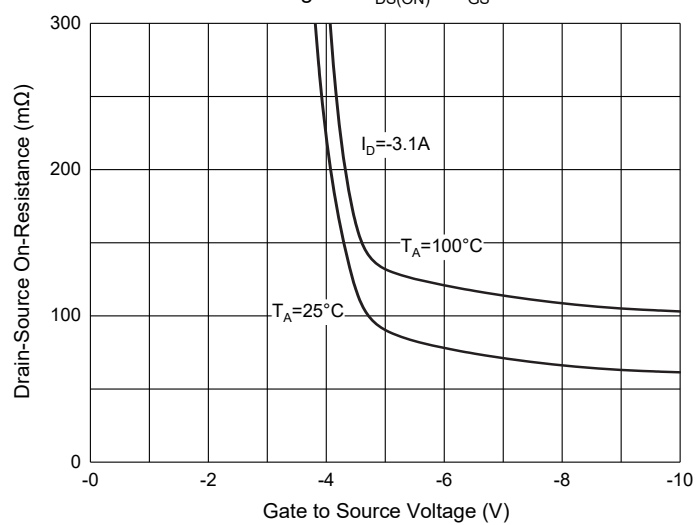
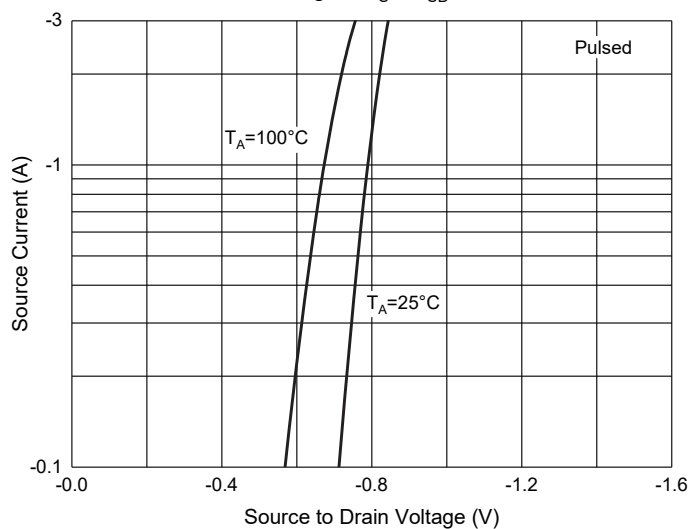


Fig. 5 - $I_S - V_{SD}$



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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