Features

- Split Gate Trench MOSFET Technology
- Low $R_{DS(on)}$ & FOM
- Low C_{rss}
- Extremely Low Switching Loss
- Excellent Stability and Uniformity
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (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

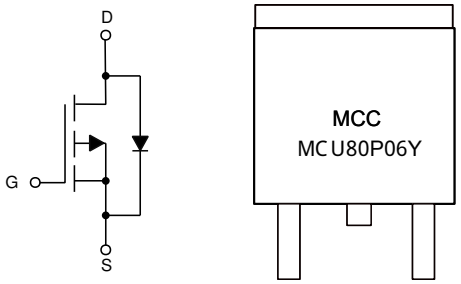
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 20°C/W Junction to Ambient(t≤10S) (2)
- Thermal Resistance: 50°C/W Junction to Ambient(Steady-State) (2)
- Thermal Resistance: 1.04°C/W Junction to Case(Steady-State) (2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Volltage	V_{GS}	±18	V
Continuous Drain Current	I_D	-80	A
Pulsed Drain Current (3)	I_{DM}	-320	A
Total Power Dissipation(4)	P_D	120	W
Single Pulsed Avalanche Energy(5)	E_{AS}	400	mJ

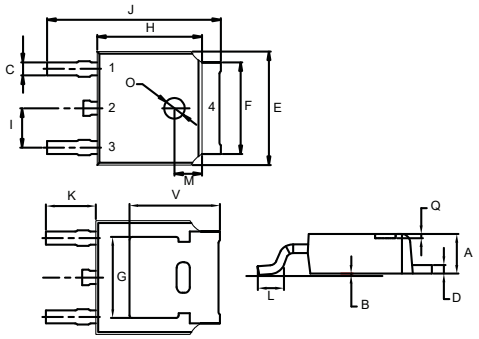
Note:

1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with T_A =25℃ . The Power dissipation P_{DSM} is based on $R_{\theta JA}$ t≤ 10s and the maximum allowed junction temperature of 150℃ . The value in any given application depends on the user's specific board design.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.
5. V_{DD}=-60V, R_G=25Ω, L=2mH, I_{AS}=20A.

Internal Structure and Marking Code



DPAK



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	0.049	0.067	1.25	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} =±18V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-2	-2.7	-4	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-20A		6.4	8.4	mΩ
Gate Resistance	R_g	Drain open, f=1Mhz		21		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-80	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-20A			-1.3	V
Reverse Recovery Time	t_{rr}	I_S=-20A,di/dt=500A/μs		46		ns
Reverse Recovery Charge	Q_{rr}			153		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-30V,V_{GS}=0V,f=1MHz		5450		pF
Output Capacitance	C_{oss}			900		
Reverse Transfer Capacitance	C_{rss}			65		
Total Gate Charge	Q_g	V_{DS}=-30V,V_{GS}=-10V,I_D=-20A		82		nC
Gate-Source Charge	Q_{gs}			24		
Gate-Drain Charge	Q_{gd}			16.6		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-30V, V_{GS}=-10V, R_G=1.6Ω, I_D=-20A		12.8		ns
Turn-On Rise Time	t_r			48		
Turn-Off Delay Time	$t_{d(off)}$			134.1		
Turn-Off Fall Time	t_f			155.6		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

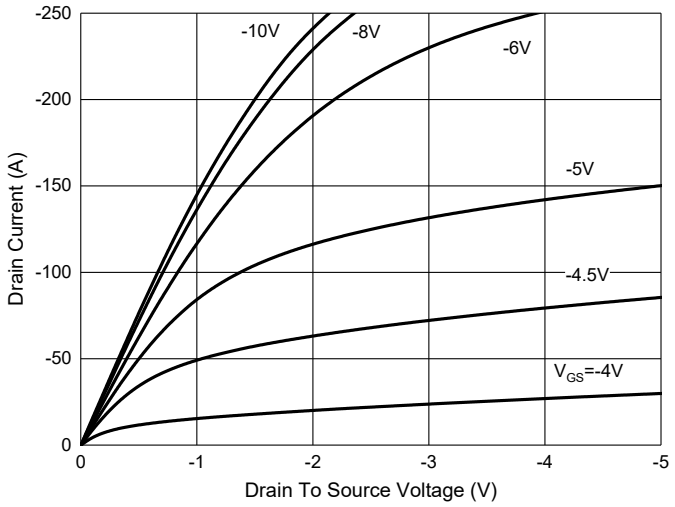


Fig. 2 - Transfer Characteristics

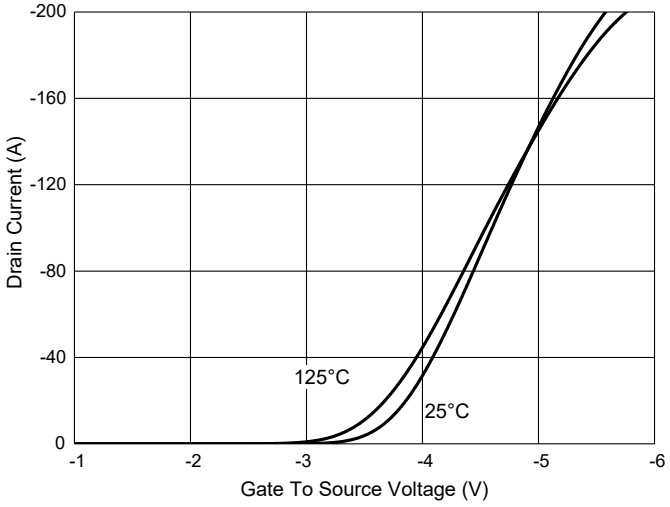


Fig. 3 - $R_{DS(ON)}$—I_D

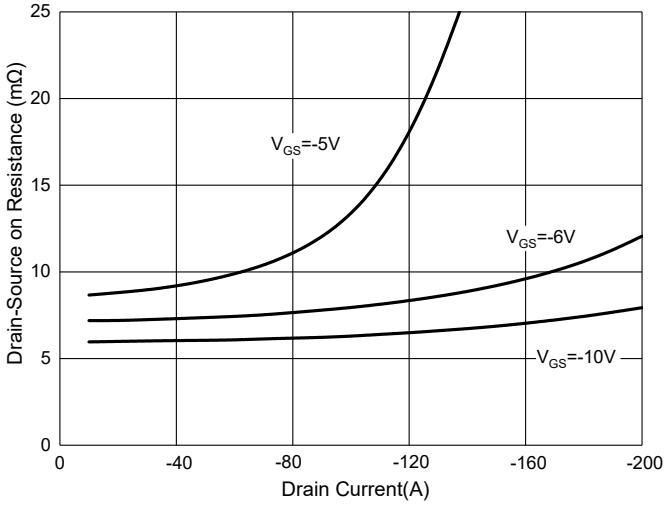


Fig. 4 - Normalized On Resistance Characteristics

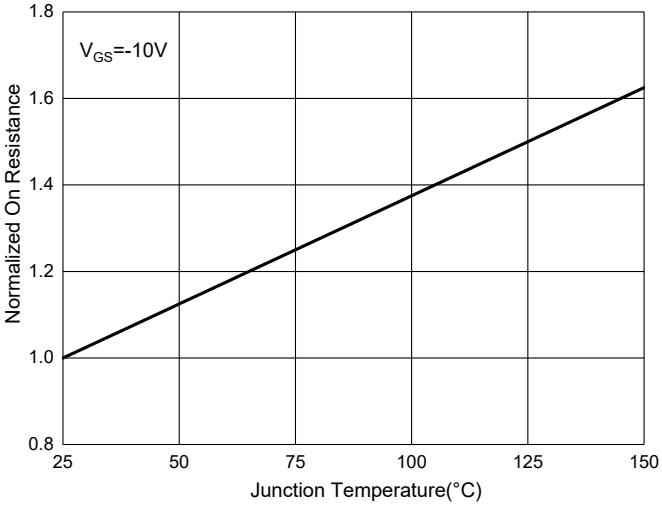


Fig. 5 - Capacitance Characteristics

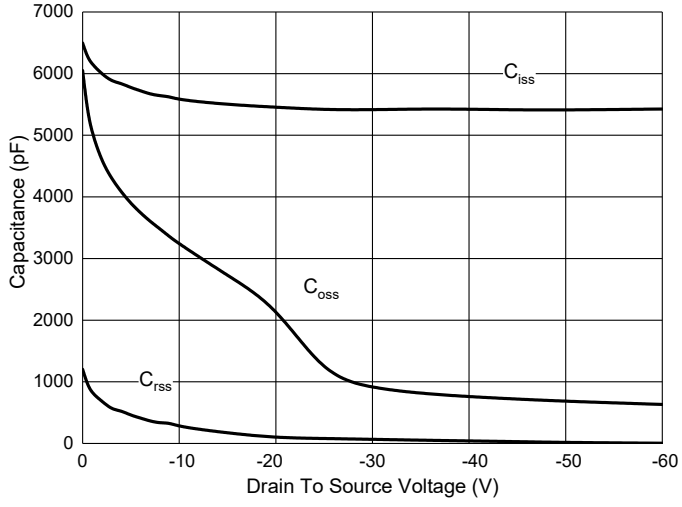
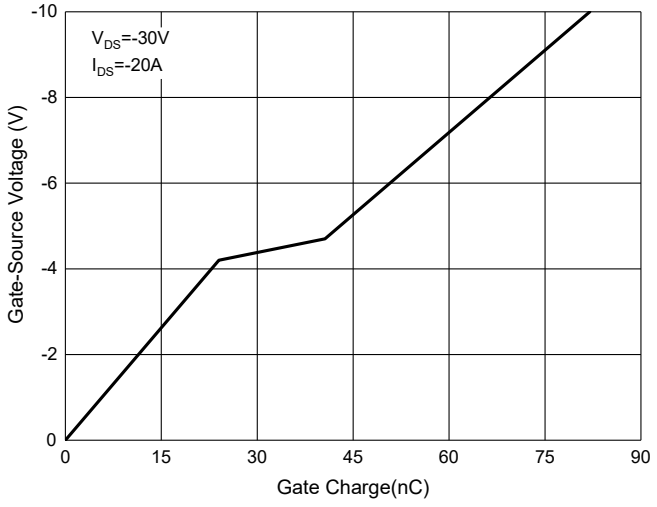


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

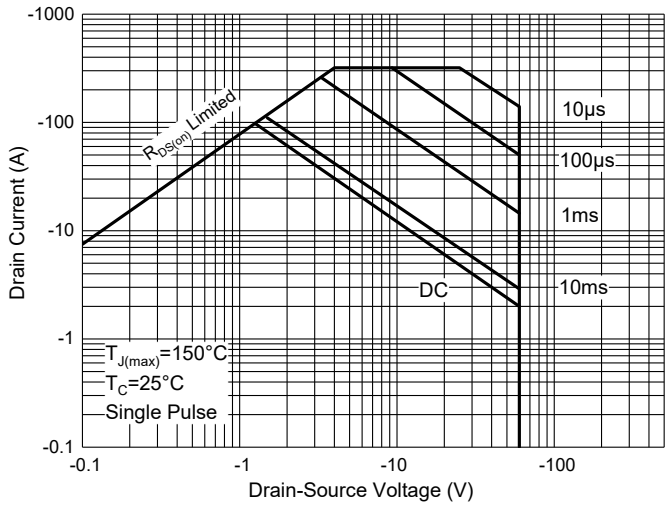
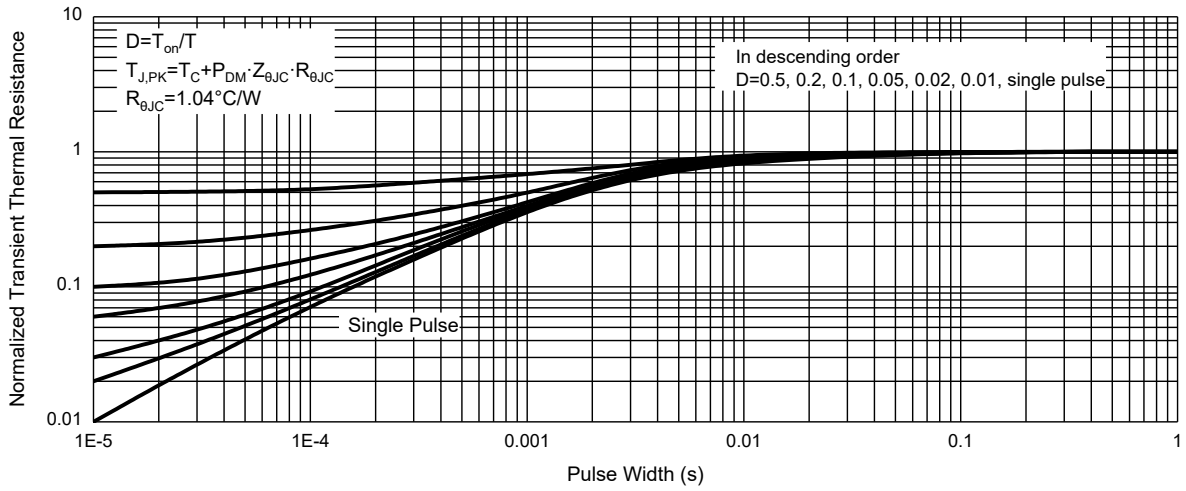


Fig. 8 - Normalized Transient Thermal Impedance



Ordering Information

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