Features

- Advanced Trench Cell Design
- High Speed Switch
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-CHANNEL MOSFET

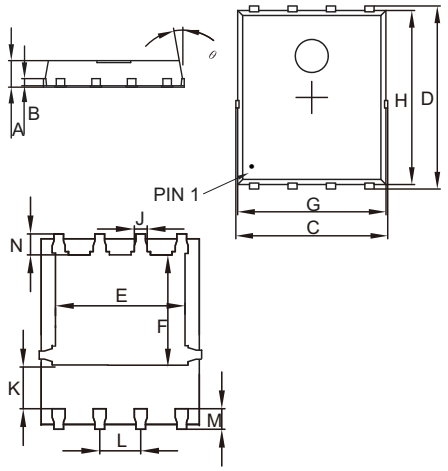
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 1.78°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(Note 2)	I_D	40	A
Pulsed Drain Current(Note 2)	I_{DM}	160	A
Total Power Dissipation(Note 2)	P_D	70	W

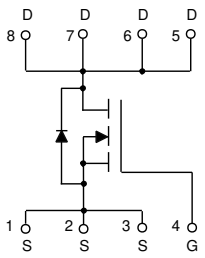
Note:
1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on 1 in² pad area, t ≤ 10 sec

DFN5060

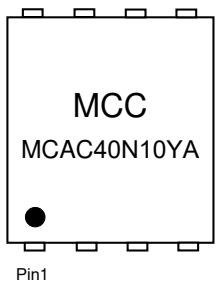


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.031	0.047	0.80	1.20	
B	0.010		0.254		TYP.
C	0.193	0.222	4.90	5.64	
D	0.232	0.250	5.90	6.35	
E	0.148	0.167	3.75	4.25	
F	0.126	0.154	3.20	3.92	
G	0.189	0.213	4.80	5.40	
H	0.222	0.239	5.65	6.06	
K	0.045	0.059	1.15	1.50	
J	0.012	0.020	0.30	0.50	
L	0.046	0.054	1.17	1.37	
M	0.012	0.028	0.30	0.71	
N	0.016	0.028	0.40	0.71	

Internal Structure



Device Marking



Pin1

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			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=80V, V_{GS}=0V			1	μA
Gate-Threshold Voltage(Note 3)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2		4	V
Drain-Source On-Resistance(Note 3)	$R_{DS(on)}$	V_{GS}=10V, I_D=20A		9.3	12	mΩ
Diode Characteristics						
Diode Forward Voltage(Note 3)	V_{SD}	V_{GS}=0V, I_{SD}=20A			1.3	V
Reverse Recovery Time	t_{rr}	I_{SD} = 20 A, dI_{SD} / dt = 100 A / μs		62		ns
Reverse Recovery Charge	Q_{rr}			83		nC
Dynamic Characteristics(Note 4)						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V,f=1MHz		1684		pF
Output Capacitance	C_{oss}			259		
Reverse Transfer Capacitance	C_{rss}			31		
Total Gate Charge	Q_g	V_{DS}=50V,V_{GS}=10V,I_D=20A		30.6		nC
Gate-Source Charge	Q_{gs}			10		
Gate-Drain Charge	Q_{gd}			8		
Turn-On Delay Time	$t_{d(on)}$	V_{DS} = 50 V, V_{GEN} = 10 V, R_G = 4.5 Ω, R_L = 2.5 Ω, I_{DS} = 20 A		10		ns
Turn-On Rise Time	t_r			21.4		
Turn-Off Delay Time	$t_{d(off)}$			21.2		
Turn-Off Fall Time	t_f			7.8		

Note 3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤2%.

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

Fig. 1 - Typical Output Characteristics

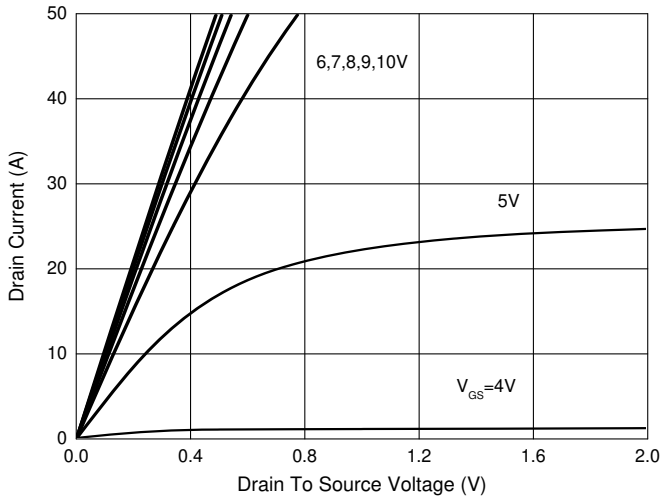


Fig. 2 - I_S—V_{SD}

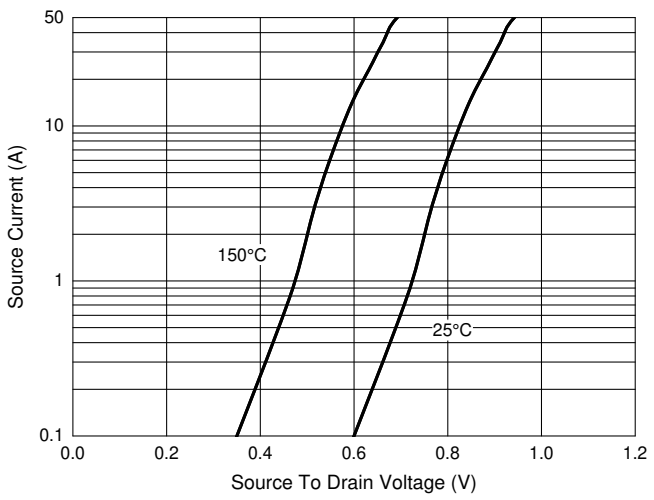


Fig. 3 - $R_{DS(ON)}$—I_D

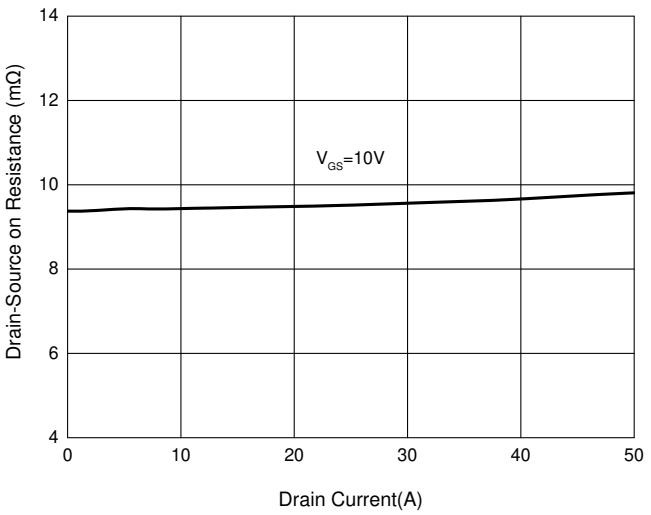


Fig. 4 - Normalized On Resistance Characteristics

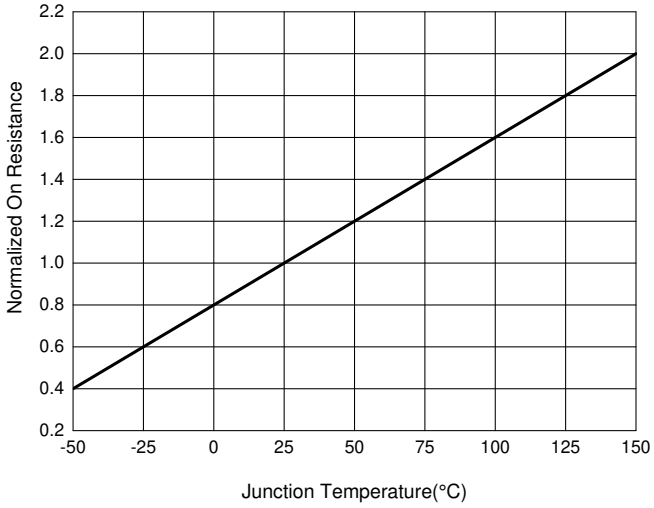


Fig. 5 - Capacitance Characteristics

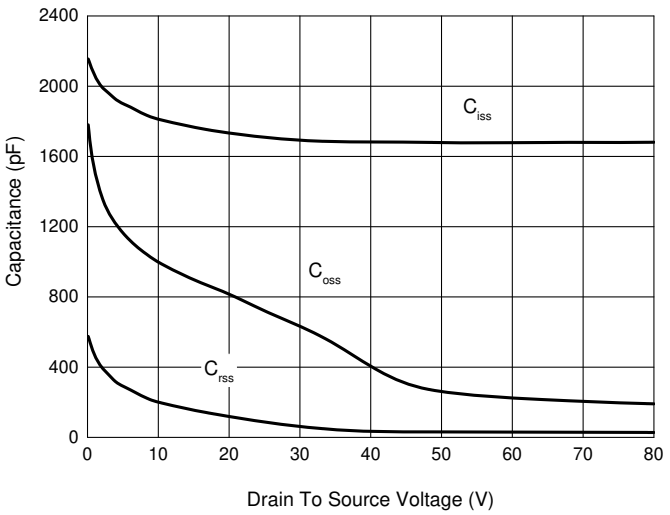


Fig. 6 - Gate Charge

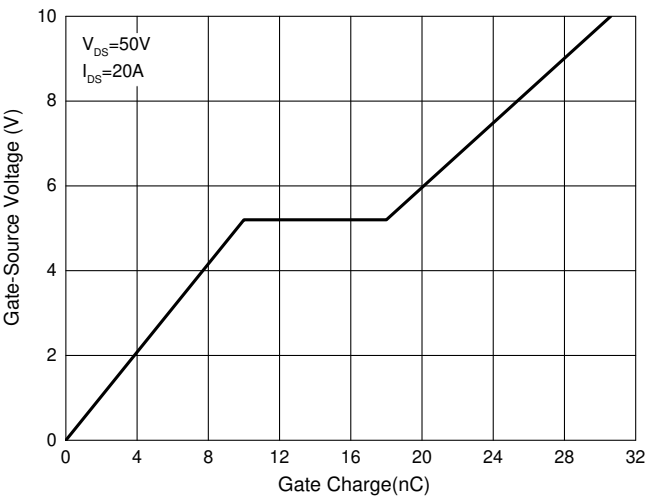
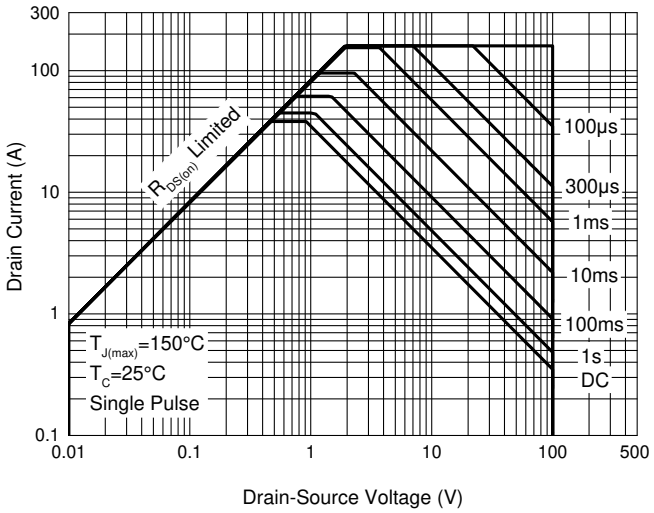


Fig. 7 - Safe Operation Area



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 5Kpcs/Reel