Features

- Split Gate Trench MOSFET Technology
- Excellent Package for Heat Dissipation
- High Density Cell Design for Low $R_{DS(on)}$
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-CHANNEL MOSFET

Maximum Ratings

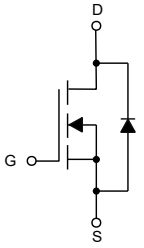
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 0.48°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Volltage	V_{GS}	±20	V
Continuous Drain Current(1)	I_D	200	A
Pulsed Drain Current (2)	I_{DM}	680	A
Total Power Dissipation(3)	P_D	260	W
Single Pulsed Avalanche Energy(4)	E_{AS}	640	mJ

Note:

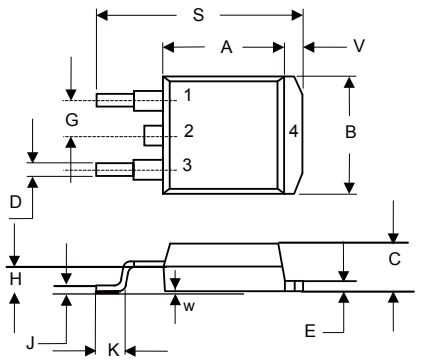
1. The maximum current rating is package limited.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. P_D is based on max. junction temperature, using junction-case thermal resistance.
4. V_{DD}=50V, R_G=25Ω, L=5mH, starting T_J=25°C.

Internal Structure



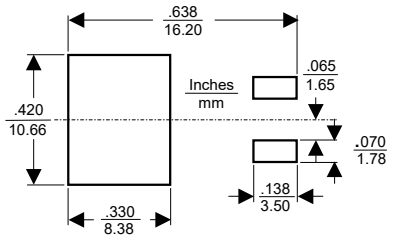
1. Gate
2,4. Drain
3. Source

D^2-PAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.331	0.370	8.40	9.40	
B	0.378	0.417	9.60	10.60	
C	0.165	0.189	4.20	4.80	
D	0.027	0.037	0.68	0.94	
E	0.045	0.055	1.14	1.40	
G	0.010		2.54		TYP.
H	0.096	0.134	2.43	3.40	
J	0.011	0.025	0.28	0.64	
K	0.071	0.131	1.80	3.32	
S	0.575	0.625	14.60	15.87	
V	0.042	0.058	1.07	1.47	
W	0.000	0.010	0.00	0.25	

Suggested Solder Pad Layout



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	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.2	2.8	3.8	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A		2.5	3.2	mΩ
		V_{GS}=6V, I_D=20A		3.4	4.3	mΩ
Diode Characteristics						
Continuous Body Diode Current	I_S				200	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=20A			1.2	V
Reverse Recovery Time	t_{rr}	I_S=25A,di/dt=100A/μs		58		ns
Reverse Recovery Charge	Q_{rr}			63		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=100KHz		4165		pF
Output Capacitance	C_{oss}			900		
Reverse Transfer Capacitance	C_{rss}			59		
Total Gate Charge	Q_g	V_{DS}=50V,V_{GS}=10V,I_D=50A		65		nC
Gate-Source Charge	Q_{gs}			11.9		
Gate-Drain Charge	Q_{gd}			9.8		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V, V_{GS}=10V, R_{GEN}=2Ω, I_D=25A		22.5		ns
Turn-On Rise Time	t_r			6.7		
Turn-Off Delay Time	$t_{d(off)}$			80.3		
Turn-Off Fall Time	t_f			26.9		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

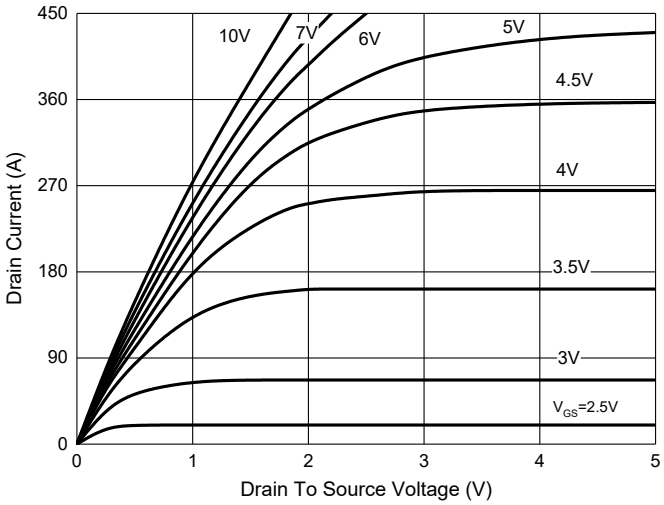


Fig. 2 - I_S—V_{SD}

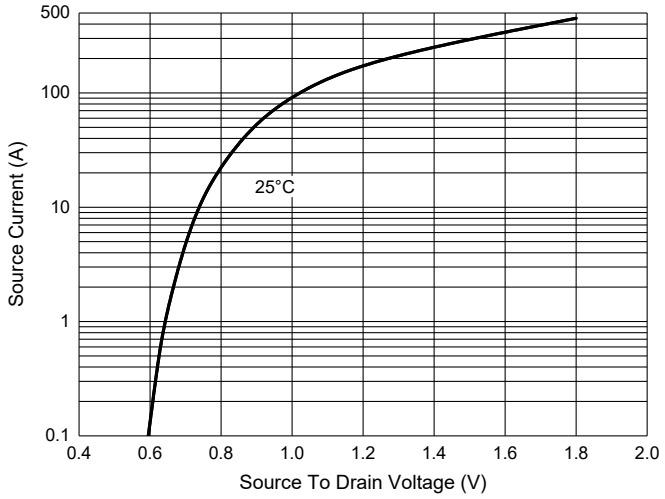


Fig. 3 - $R_{DS(ON)}$—I_D

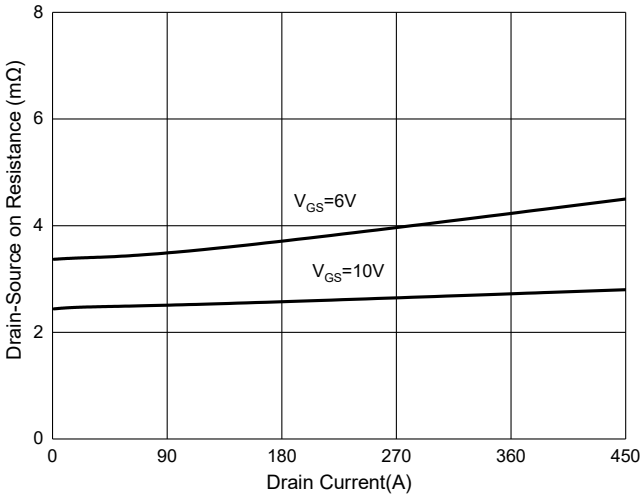


Fig. 4 - Normalized On Resistance Characteristics

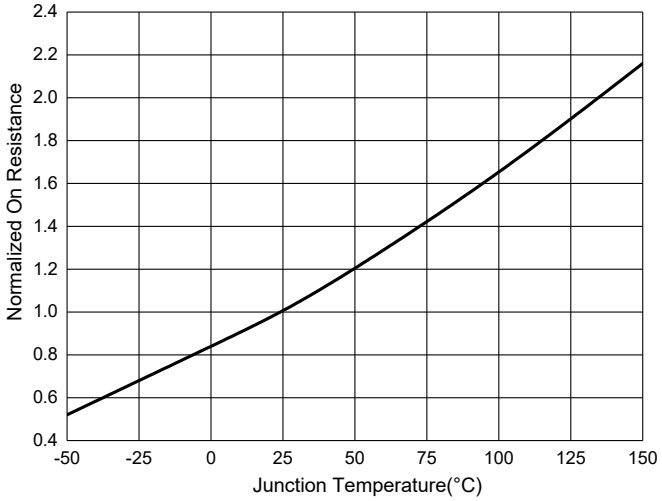


Fig. 5 - Capacitance Characteristics

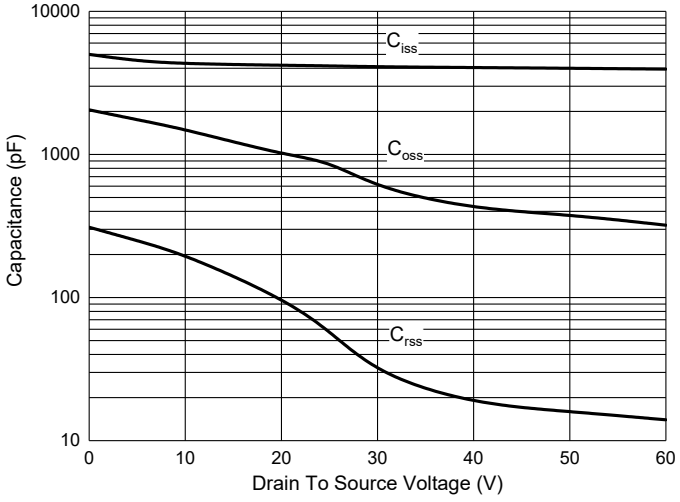
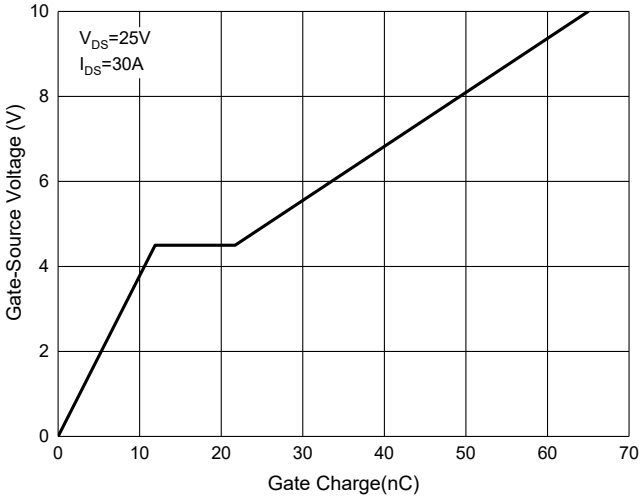
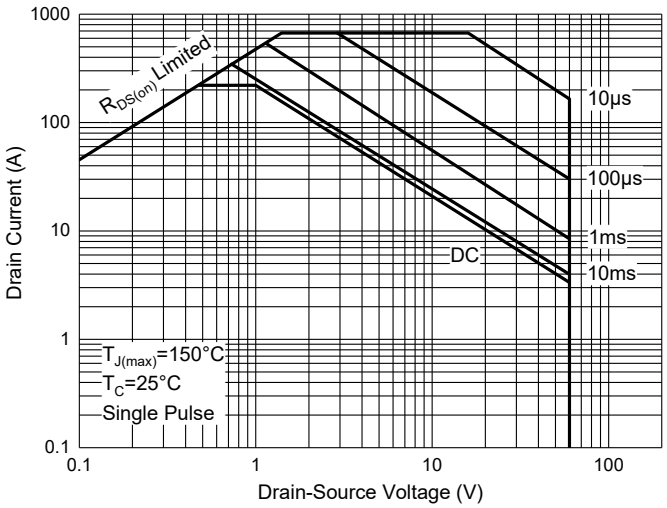


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Commercial Components (MCC):

MCB200N06YA-TP