

Features

- Fast Switching
- Improved dv/dt Capability
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

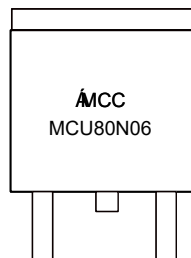
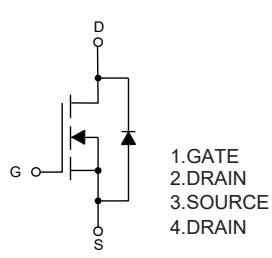
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range : -55°C to +175°C
- Thermal Resistance : 1.76°C/W Junction to Case

Parameter		Symbol	Value
Drain-source Voltage		V_{DS}	60V
Gate-source Voltage		V_{GS}	±20V
Drain Current	$T_C=25^\circ\text{C}$	I_D	80A
	$T_C=100^\circ\text{C}$		56A
Pulsed Drain Current		I_{DM}	240A
Power Dissipation		P_D	68W
Single Pulsed Avalanche Energy ⁽¹⁾		E_{AS}	225mJ

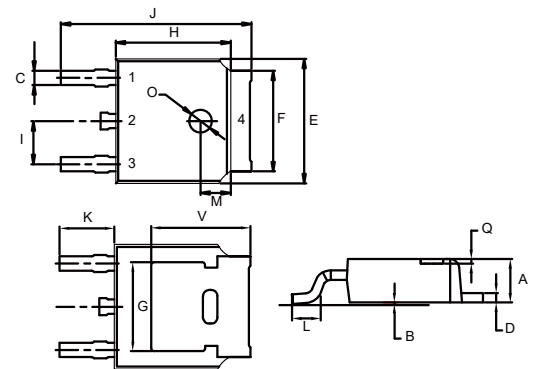
Note: 1. E_{AS} Condition: $T_j=25^\circ\text{C}$, $V_{DD}=30\text{V}$, $V_G=10\text{V}$, $L=0.5\text{mH}$, $R_g=25\Omega$

Internal Structure and Marking Code



N-CHANNEL MOSFET

DPAK



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 (Ta=25°C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.7	2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$		5.5	7.5	m Ω
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=10A$		6.9	9.5	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=30A$	30	-	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V,$ $F=1.0MHz$	-	1990	-	PF
Output Capacitance	C_{oss}		-	470	-	PF
Reverse Transfer Capacitance	C_{rss}		-	14	-	PF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=2A, R_L=1\Omega$ $V_{GS}=10V, R_{GEN}=3\Omega$	-	16	-	nS
Turn-on Rise Time	t_r		-	8	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	45	-	nS
Turn-Off Fall Time	t_f		-	33	-	nS
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=20A,$ $V_{GS}=10V$	-	31	-	nC
Gate-Source Charge	Q_{gs}		-	6	-	nC
Gate-Drain Charge	Q_{gd}		-	5	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=30A$	-	-	1.2	V
Diode Forward Current	I_S		-	-	80	A
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = 30A$ $di/dt = 100A/\mu s$	-	35		nS
Reverse Recovery Charge	Q_{rr}		-	47		nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Curve Characteristics

Fig. 1-Output Characteristics

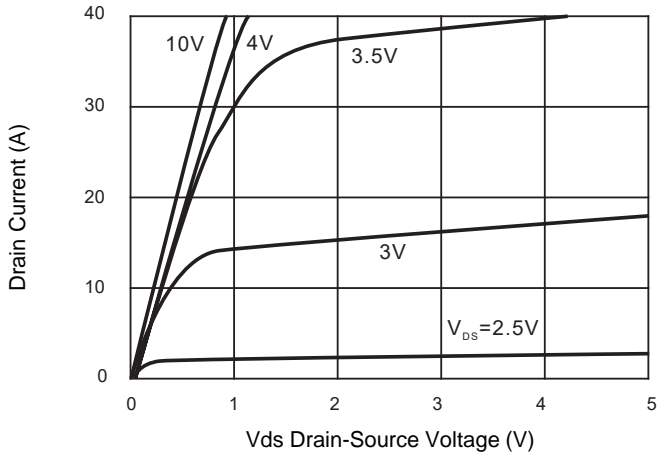


Fig. 2-Rdson-JunctionTemperature

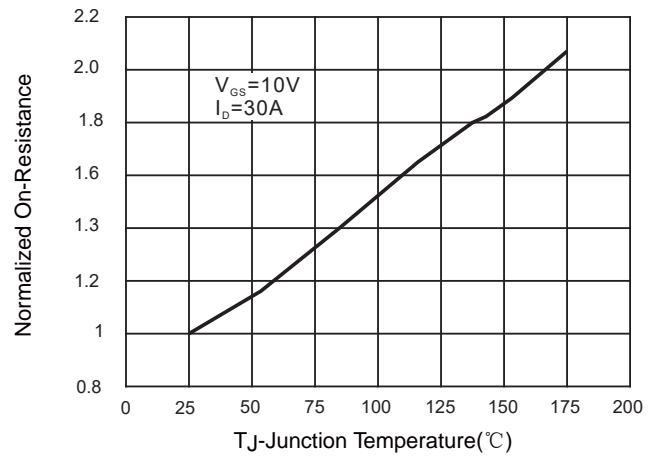


Fig. 3-Transfer Characteristics

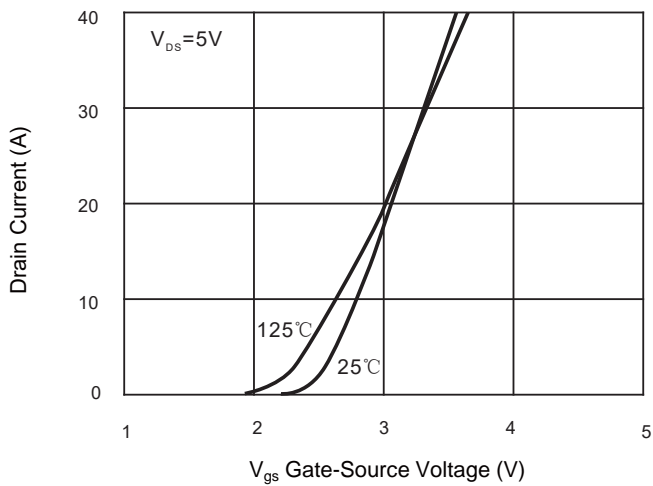


Fig. 4 - Total Gate Charge Characteristics

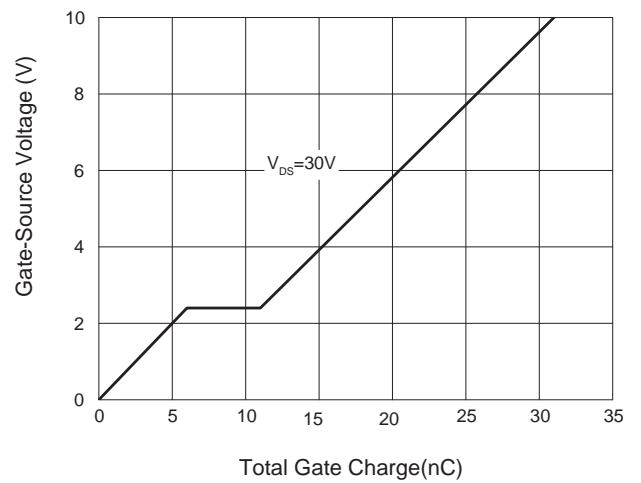


Fig. 5-Rdson- Drain Current

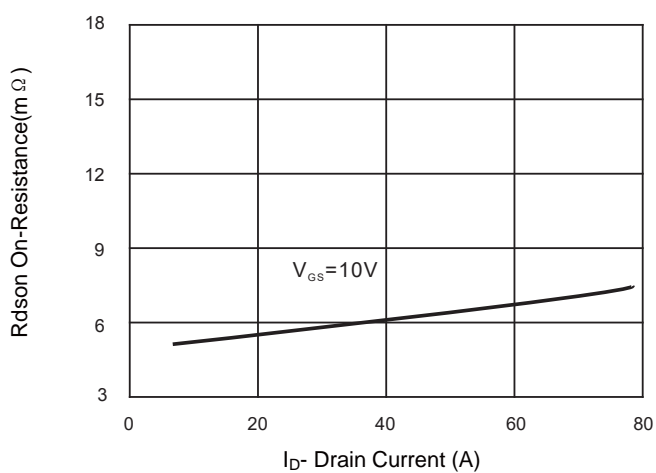
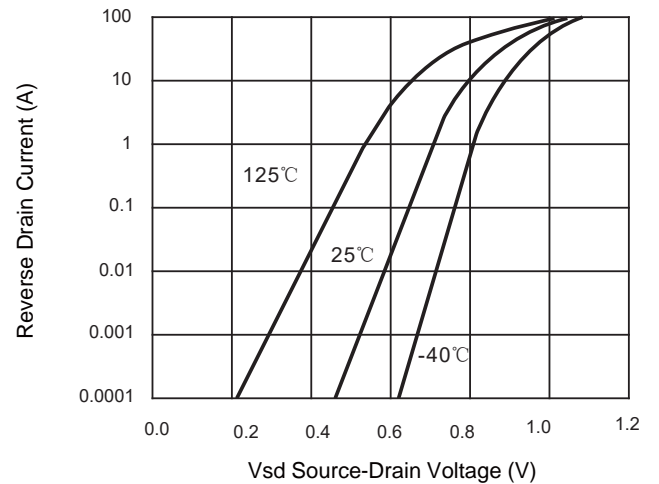
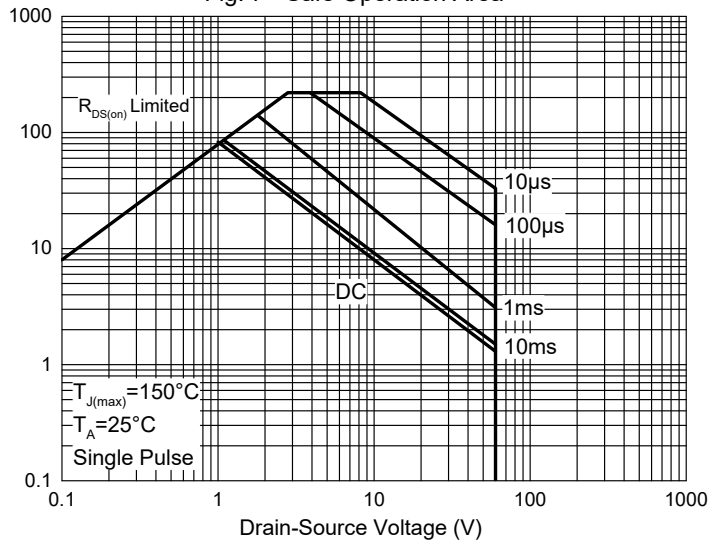


Fig. 6-Source- Drain Diode Forward



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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

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