

Features

- Excellent Package for Heat Dissipation
- High Density Cell Design for Low $R_{DS(ON)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

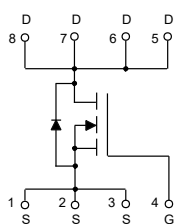
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 5°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	T _C =25°C	I _D	30	A
	T _C =100°C		19	A
Pulsed Drain Current		I _{DM}	130	A
Avalanche Energy, Single Pulse ^(Note1)		E _{AS}	100	mJ
Total Power Dissipation		P _D	30	W

Note: 1. $T_J=25^\circ\text{C}$, $V_{DD}=40\text{V}$, $V_G=10\text{V}$, $L=0.5\text{mH}$, $R_g=25\Omega$

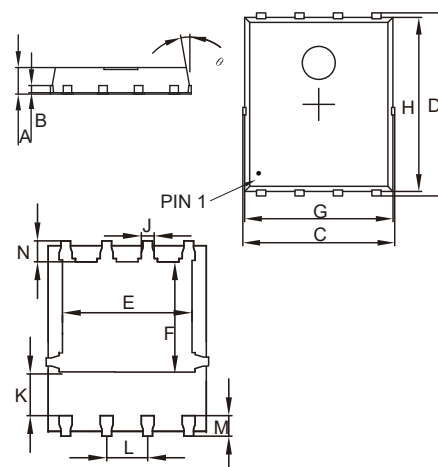
Internal Structure



Marking:MCAC30N06Y

N-CHANNEL MOSFET

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	

Electrical Characteristics @ 25° C (Unless Otherwise Specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Parameter						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate-Threshold Voltage ^(Note 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	2.5	V
Gate-Body Leakage	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
Drain-Source On-Resistance ^(Note 2)	R _{DS(on)}	V _{GS} =10V, I _D =15A		16	20	mΩ
		V _{GS} =4.5V, I _D =10A		17.5	22	
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =10A		0.85	1.2	V
Dynamic Parameters ^(Note3)						
Input Capacitance	C _{iss}	V _{DS} =30V,V _{GS} =0V, f=1MHz		1552		pF
Output Capacitance	C _{oss}			192		
Reverse Transfer Capacitance	C _{rss}			133		
Switching Parameters ^(Note3)						
Total Gate Charge	Q _g	V _{GS} =10V,V _{DS} =30V, I _D =15A		48		nC
Gate-Source Charge	Q _{gs}			7		
Gate-Drain Charge	Q _{gd}			10		
Reverse Recovery Charge	Q _{rr}	I _F =10A, di/dt=500A/us		47		
Reverse Recovery Time	t _{rr}			39		
Turn-On Delay Time	t _{d(on)}	V _{DD} =30V,V _{GS} =10V, R _L =1Ω, I _D =2A, R _{GEN} =3Ω		11		ns
Turn-On Rise Time	tr			6		
Turn-Off Delay Time	t _{d(off)}			30		
Turn-Off Fall Time	t _f			9		

Note: 2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

3. These Parameters Have No Way to Verify.

Curve Characteristics

Fig. 1 - Typical Output Characteristics

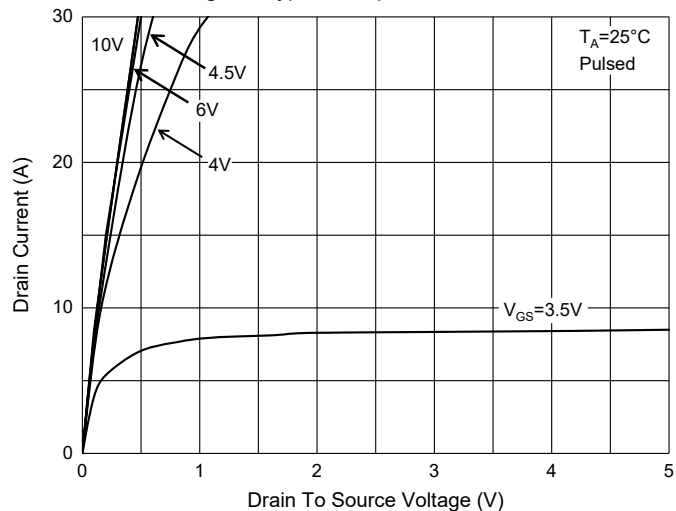


Fig. 2 - Transfer Characteristics

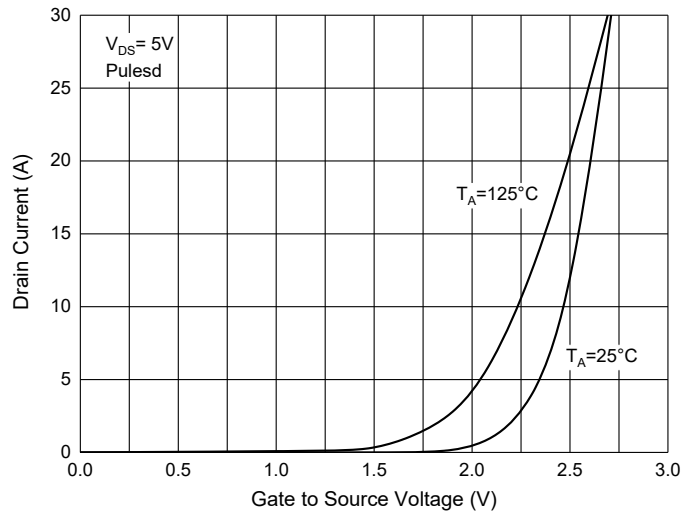


Fig. 3 - Capacitance Characteristics

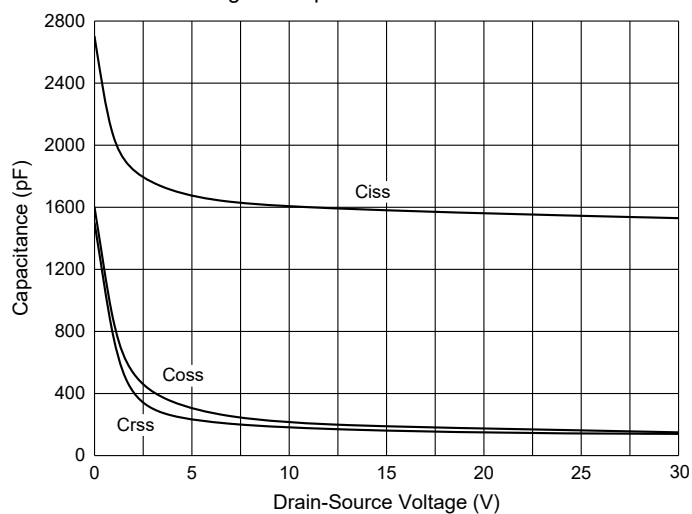


Fig. 4 - Gate Charge

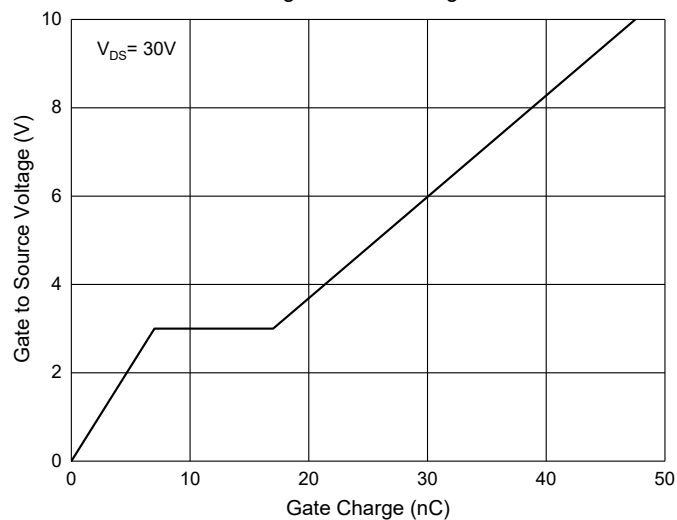


Fig. 5 - $R_{DS(ON)} - I_D$

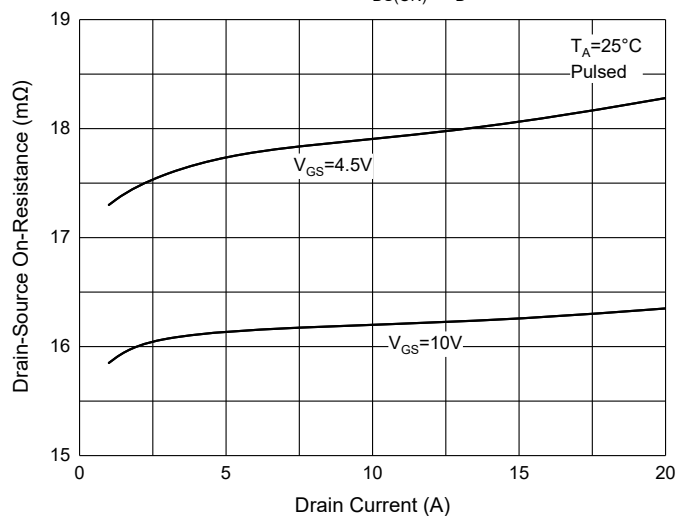
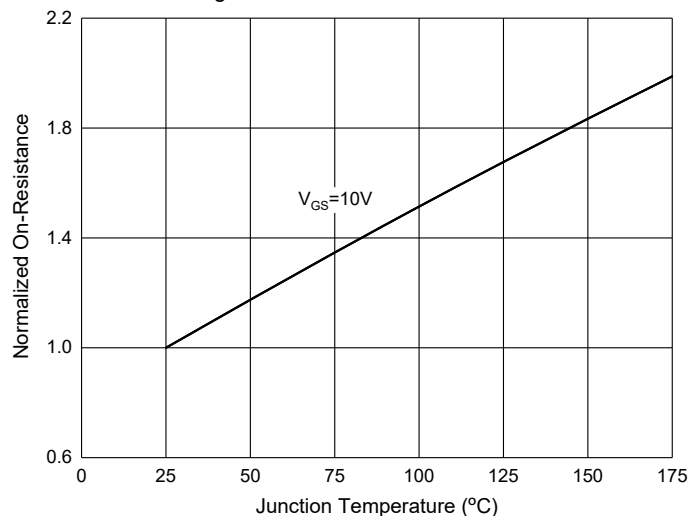


Fig. 6 - Drain-Source on Resistance



Ordering Information

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

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

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