

**Features**

- AEC-Q101 Qualified
- Split Gate Trench Mosfet Technology
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

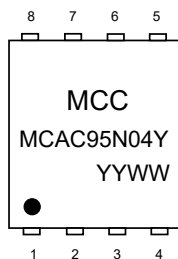
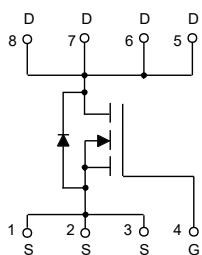
- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 50°C/W Junction to Ambient<sup>(Note 2)</sup>
- Thermal Resistance: 2°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	40	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	T <sub>C</sub> =25°C	95
		T <sub>C</sub> =100°C	67
Pulsed Drain Current <sup>(Note 3)</sup>	I <sub>DM</sub>	380	A
Total Power Dissipation <sup>(Note 4)</sup>	P <sub>D</sub>	75	W
Single Pulse Avalanche Energy <sup>(Note 5)</sup>	E <sub>AS</sub>	132	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<sub>θJA</sub> is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with T<sub>A</sub>=25°C.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P<sub>D</sub> is based on max. junction temperature, using junction-case thermal resistance.
5. T<sub>J</sub>=25°C, V<sub>DD</sub>=30V, V<sub>GS</sub>=10V, R<sub>g</sub>=25Ω, L=0.5mH.

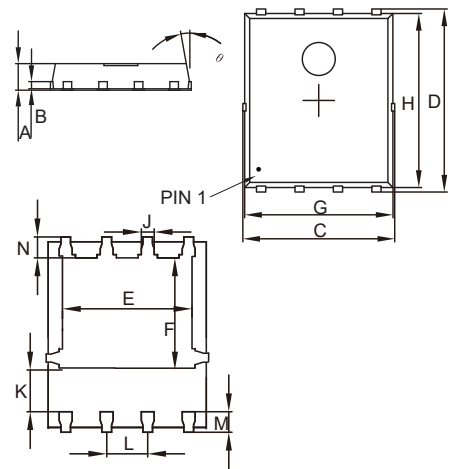
**Internal Structure and Marking Code**



4 codes in total  
YY is the year  
WW is the week

**N-CHANNEL  
MOSFET**

**DFN5060**



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	

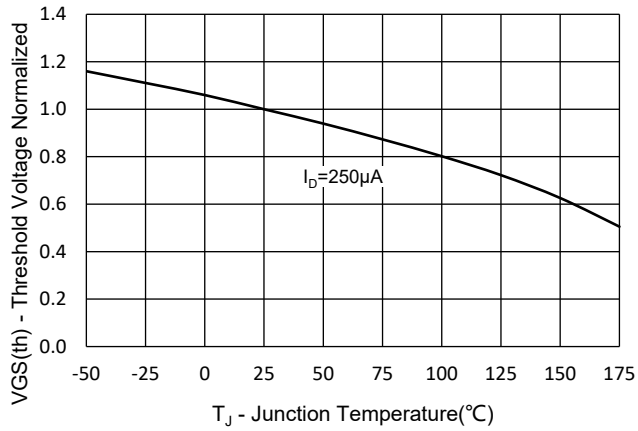
**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=1mA$	40			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=32V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	2.8	4	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$		2.4	3.2	m $\Omega$
		$V_{GS}=6V, I_D=20A$		4.1	5.8	
Gate Resistance	$R_g$	f=1 MHz, Open drain		0.8		$\Omega$
<b>Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				95	A
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=60A$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F=50A, di_F/dt=100A/\mu s$		40		ns
Reverse Recovery Charge	$Q_{rr}$			34		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=20V, V_{GS}=0V, f=1MHz$		1709		pF
Output Capacitance	$C_{oss}$			1088		
Reverse Transfer Capacitance	$C_{riss}$			51		
Total Gate Charge	$Q_g$	$V_{DS}=20V, V_{GS}=10V, I_D=50A$		27.7		nC
Gate-Source Charge	$Q_{gs}$			6.4		
Gate-Drain Charge	$Q_{gd}$			9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=20V, V_{GS}=10V,$ $R_{GEN}=6\Omega, I_{DS}=50A$		12.7		ns
Turn-On Rise Time	$t_r$			10		
Turn-Off Delay Time	$t_{d(off)}$			19		
Turn-Off Fall Time	$t_f$			8		

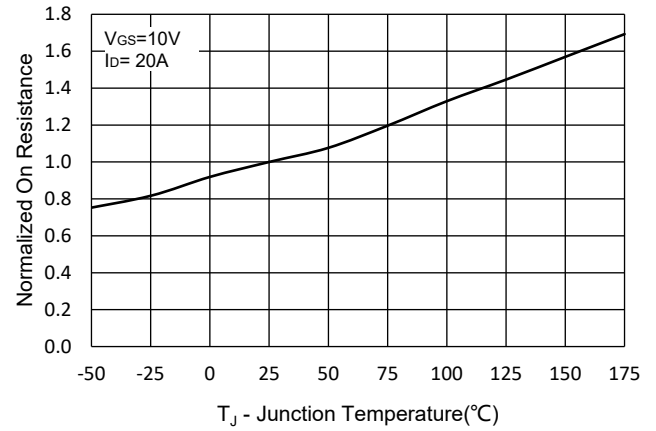


## Curve Characteristics

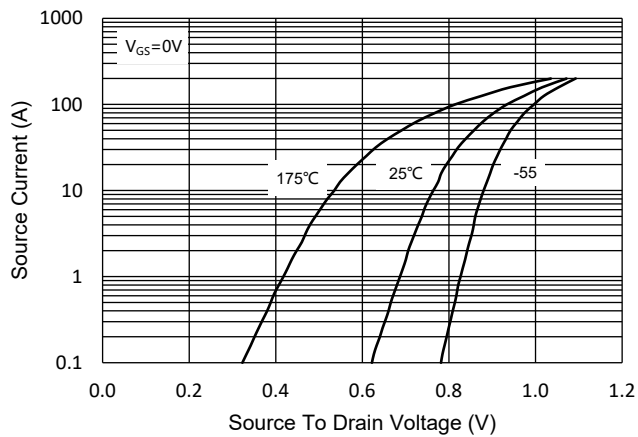
**Fig.7 - Normalized Threshold Voltage**



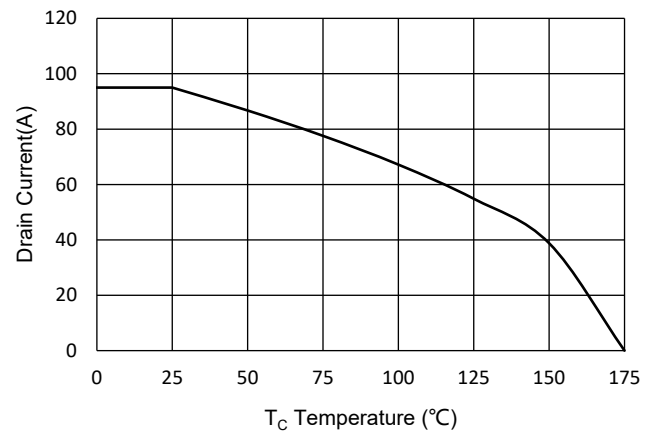
**Fig.8 - Normalized On Resistance Characteristics**



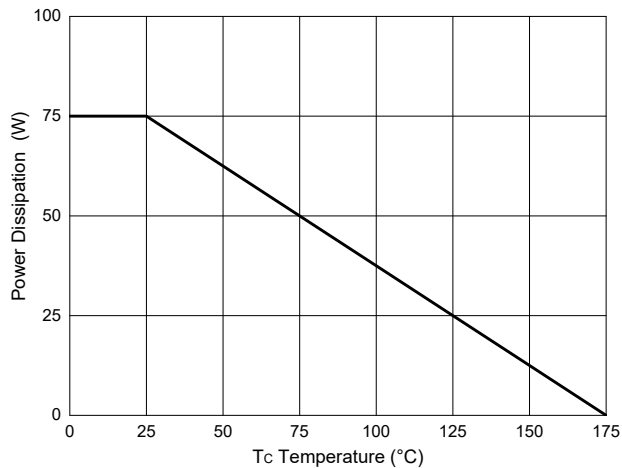
**Fig.9 -  $I_S - V_{SD}$**



**Fig.10 - Drain Current**

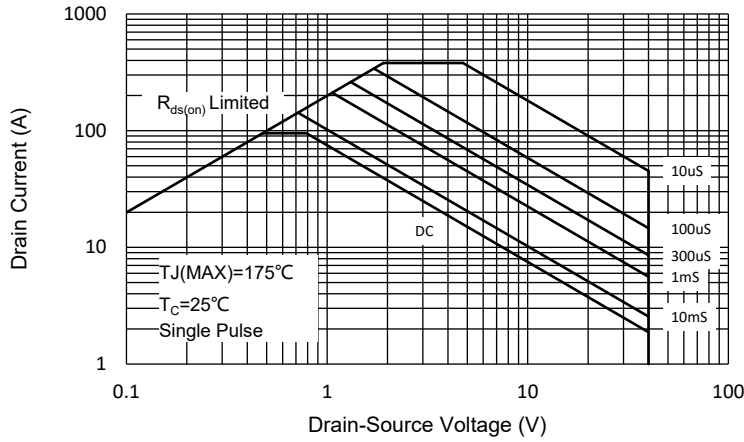


**Fig.11 - PD Dissipation**

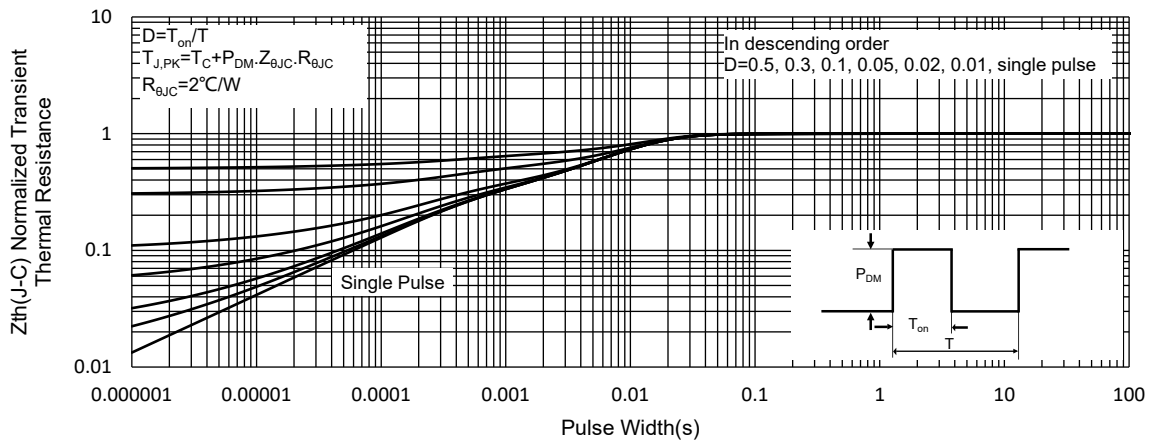


**Curve Characteristics**

**Fig.12 - Safe Operation Area**



**Fig.13 - Normalized Transient Thermal Impedance**



## Ordering Information

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

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