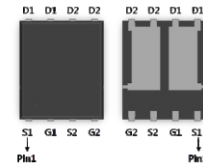


CMS08NN10H8-HF

Dual N-Channel
RoHS Device
Halogen Free



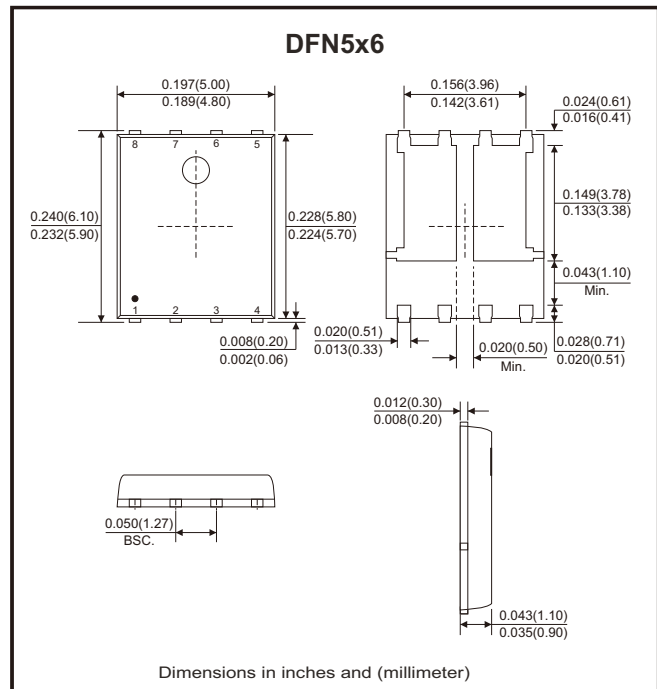
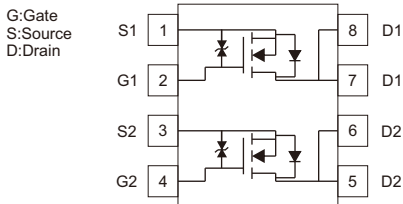
Features

- Low on-resistance.
- Low gate charge.
- Fast switching characteristic.
- ESD protected gate.

Mechanical data

- Case: DFN5x6, molded plastic.
- Mounting position: Any.

Circuit Diagram



Maximum Ratings (at TA=25°C unless otherwise noted)

Parameter	Symbol	Limits	Unit
Drain-source voltage	V_{DS}	100	V
Gate-source voltage	V_{GS}	±20	V
Continuous drain current (Note 1)	I_D	$V_{GS} = 10V, T_C = 25^\circ C$	8
		$V_{GS} = 10V, T_C = 100^\circ C$	5
Continuous drain current (Note 2)	I_D	$V_{GS} = 10V, T_A = 25^\circ C$	2.7
		$V_{GS} = 10V, T_A = 70^\circ C$	2.2
Pulsed drain current (Note 3)	I_{DM}	32	A
Continuous body diode forward current @ $T_C = 25^\circ C$ (Note 1)	I_S	13	A
Total Power dissipation (Note 1)	P_D	$T_C = 25^\circ C$	16
		$T_C = 100^\circ C$	6.4
Total Power dissipation (Note 2)	P_D	$T_A = 25^\circ C$	1.8
		$T_A = 75^\circ C$	1.2
Thermal resistance, junction to case	$R_{\theta JC}$	8	°C/W
Thermal resistance, junction to ambient (Note 2)	$R_{\theta JA}$	70	°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0		2.5	V
Forward transconductance	G_{FS}	$V_{DS} = 10V, I_D = 2A$		3		S
Gate-source leakage	I_{GSS}	$V_{GS} = \pm 16V, V_{DS} = 0V$			± 10	μA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 80V, V_{GS} = 0V$			1	
Static Drain-source on-state resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 2A$		92	120	m Ω
		$V_{GS} = 4.5V, I_D = 2A$		120	165	
Dynamic						
Input capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		270		pF
Output capacitance	C_{oss}			33		
Reverse transfer capacitance	C_{rss}			6		
Gate resistance	R_g	$f = 1MHz$		6.5		Ω
Total gate charge (Note 4, 5)	Q_g	$V_{DS} = 50V, I_D = 2A, V_{GS} = 10V$		6.2		nC
Gate-source charge (Note 4, 5)	Q_{gs}			1.1		
Gate-drain charge (Note 4, 5)	Q_{gd}			1.4		
Turn-on delay time (Note 4, 5)	$t_{d(ON)}$	$V_{DS} = 50V, I_D = 2A, V_{GS} = 10V, R_{GS} = 6\Omega$		5.2		ns
Rise time (Note 4, 5)	t_r			17		
Turn-off delay time (Note 4, 5)	$t_{d(OFF)}$			17		
Fall time (Note 4, 5)	t_f			7		
Source-Drain Diode						
Diode forward voltage (Note 4)	V_{SD}	$I_S = 2A, V_{GS} = 0V$		0.85	1.2	V
Reverse recovery time	t_{rr}	$I_F = 2A, dI_F/dt = 100A/\mu s$		17		ns
Recovered charge	Q_{rr}				13	

Notes: 1. The power dissipation PD is based on $T_J(MAX)=150^\circ C$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for case where additional heatinking is used.

2. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz. copper, in a still air environment with $T_A=25^\circ C$. The power dissipation PD is based on $R_{\theta JA}$ and the maximum allowed junction temperature of $150^\circ C$. The value in any given application depends on the user's specific board design.

3. Repetitive rating, pulse width limited by junction temperature $T_J(MAX)=150^\circ C$. Ratings are based on low frequency and low duty cycles to keep initial $T_J=25^\circ C$.

4. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

5. Independent of operating temperature.

Typical Rating and Characteristic Curves (CMS08NN10H8-HF)

Fig.1 - Typical Output Characteristics

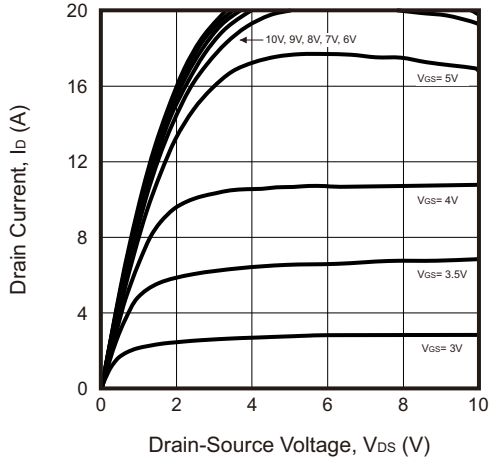


Fig.2 - Breakdown Voltage vs Ambient Temperature

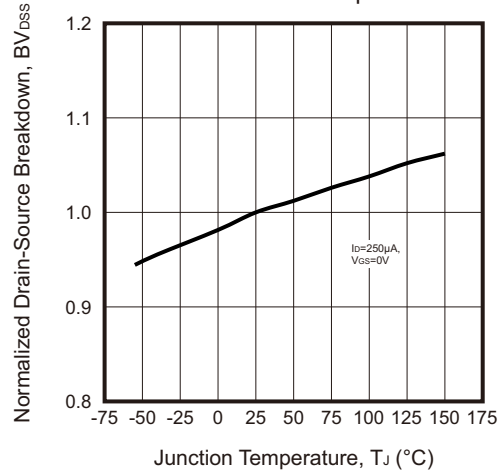


Fig.3 - Static Drain-Source On-State Resistance vs Drain Current

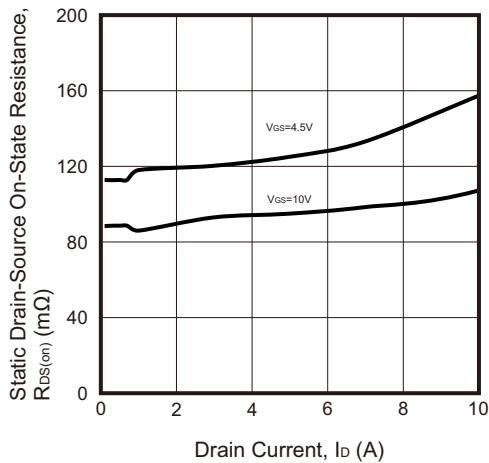


Fig.4 - Body Diode Current vs Source-Drain Voltage

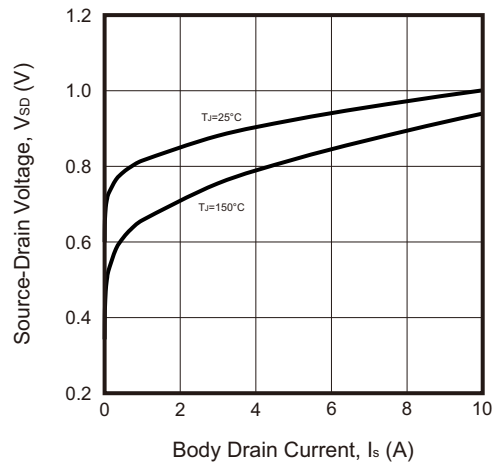


Fig.5 - Static Drain-Source On-State Resistance vs Gate-Source Voltage

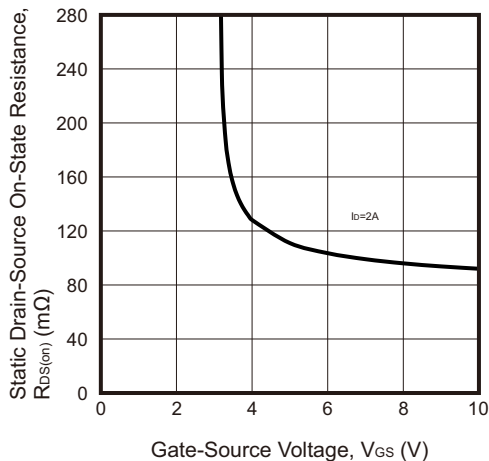
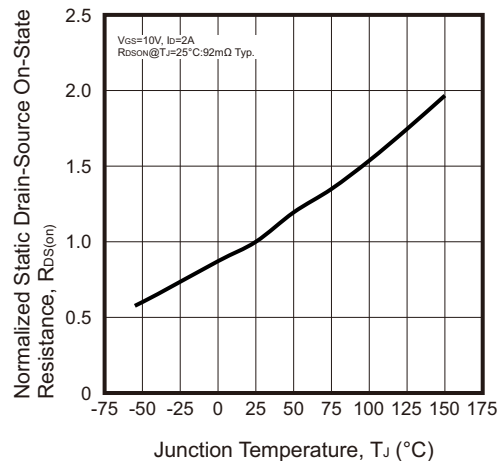


Fig.6 - Drain-Source On-State Resistance vs Junction Temperature



Typical Rating and Characteristic Curves (CMS08NN10H8-HF)

Fig.7 - Capacitance vs Drain-to-Source Voltage

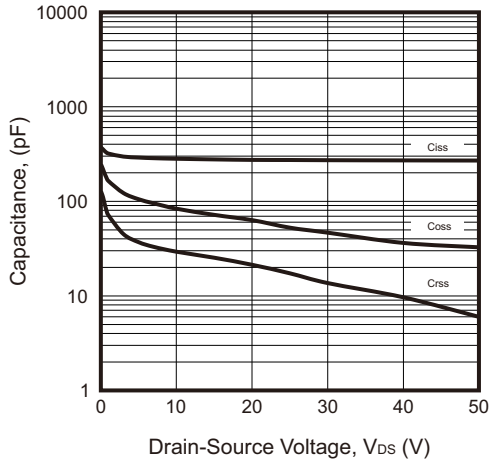


Fig.8 - Threshold Voltage vs Junction Temperature

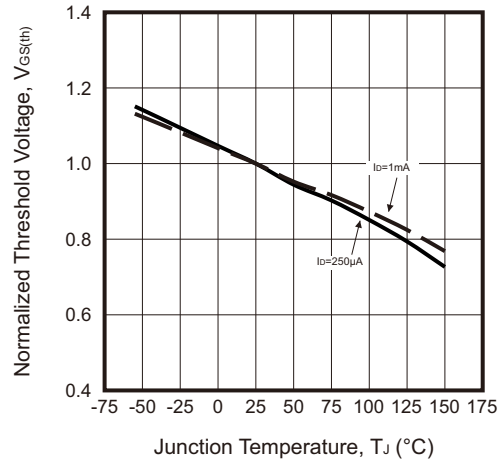


Fig.9 - Forward Transfer Admittance vs Drain Current

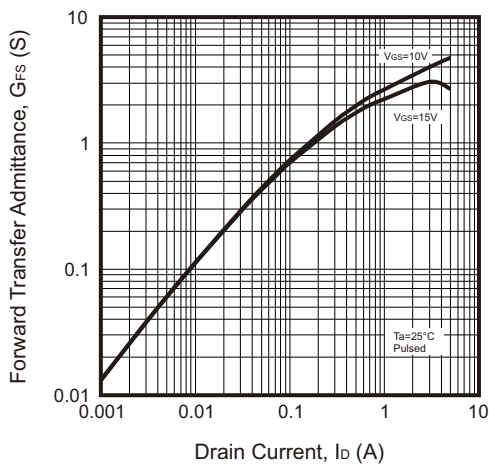


Fig.10 - Gate Charge Characteristics

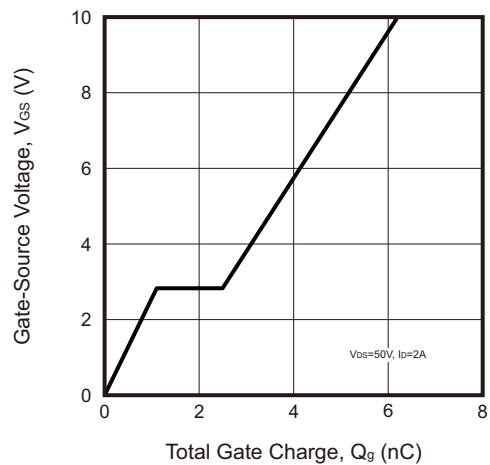


Fig.11 - Maximum Safe Operating Area

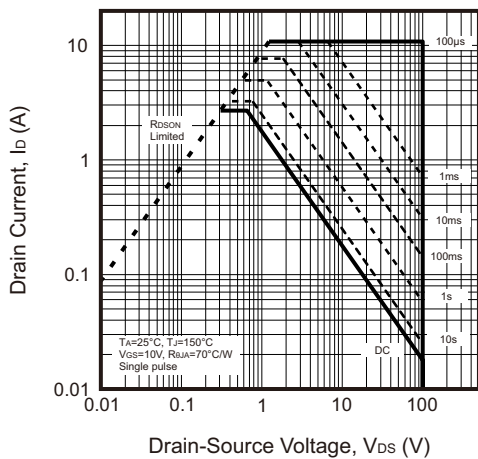
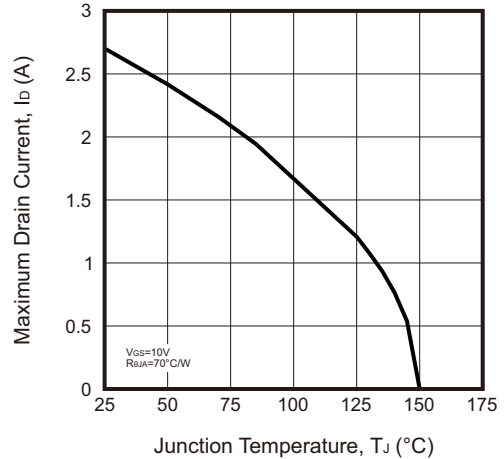
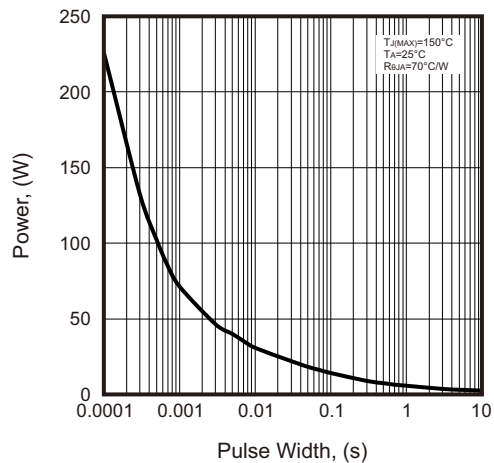


Fig.12 - Maximum Drain Current vs Junction Temperature

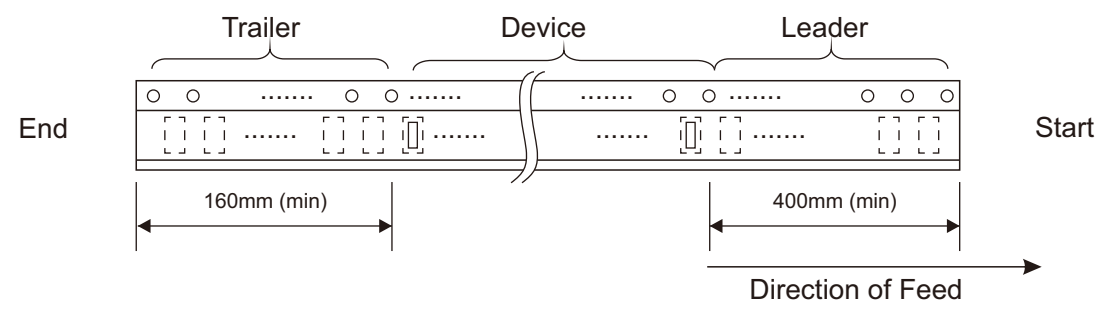
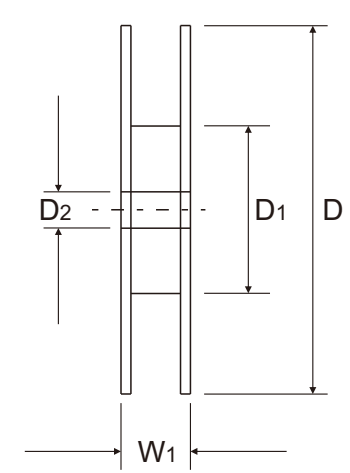
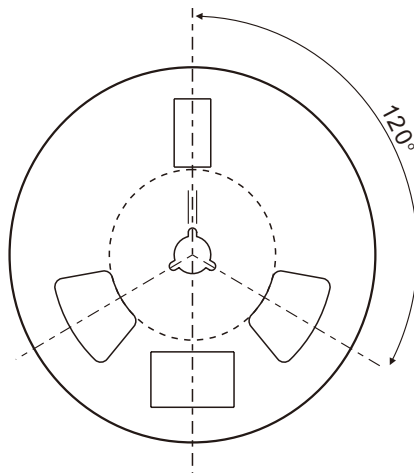
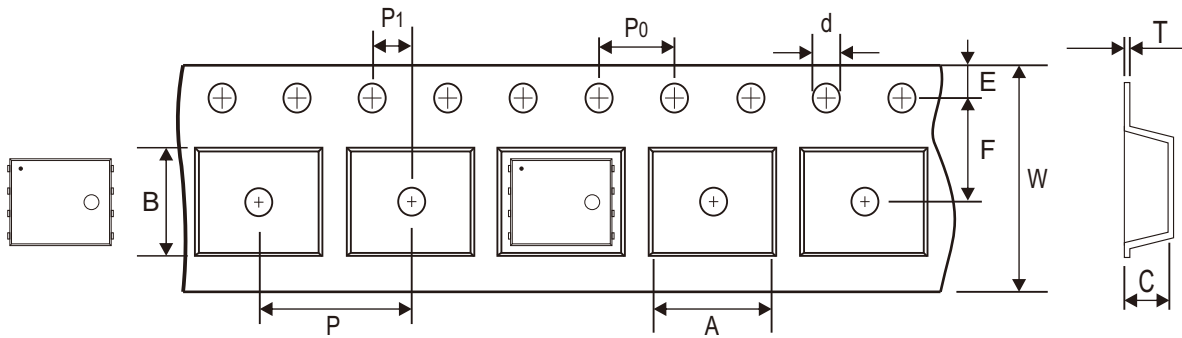


Typical Rating and Characteristic Curves (CMS08NN10H8-HF)

Fig.13 - Single Pulse Power Rating, Junction to Ambient



Reel Taping Specification

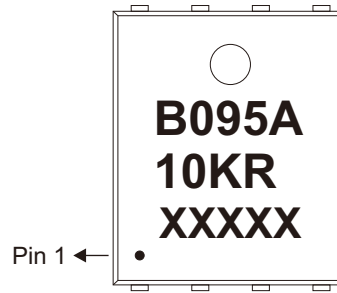


DFN5x6	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	6.50 ± 0.10	5.30 ± 0.10	1.40 ± 0.10	1.50 + 0.10 - 0.00	330.00 ± 2.00	178 + 0.00 - 2.00	13.00 + 0.50 - 0.00
	(inch)	0.256 ± 0.004	0.209 ± 0.004	0.055 ± 0.004	0.059 + 0.004 - 0.000	12.992 ± 0.079	7.008 + 0.000 - 0.079	0.512 + 0.020 - 0.000

DFN5x6	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.30 ± 0.05	12.00 ± 0.30	18.40 ± 0.50
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.012 ± 0.002	0.472 ± 0.012	0.724 ± 0.020

Marking Code

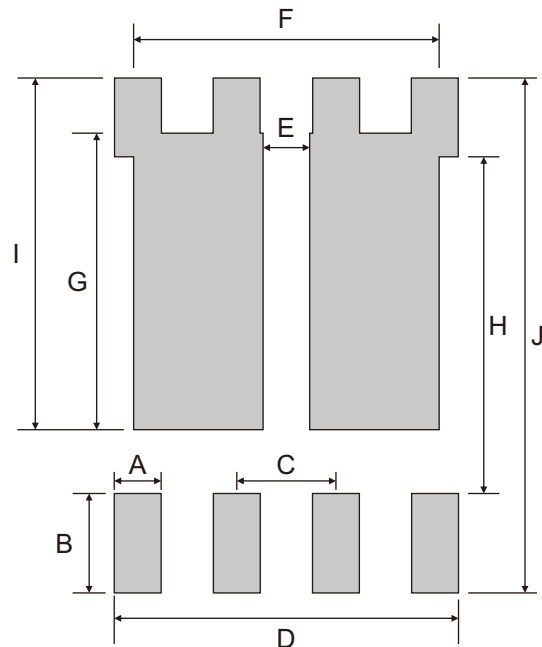
Part Number	Marking Code
CMS08NN10H8-HF	B095A10KR XXXXX



XXXXX = Control code

Suggested P.C.B. PAD Layout

SIZE	DFN5x6	
	(mm)	(inch)
A	0.61	0.024
B	1.27	0.050
C	1.27	0.050
D	4.42	0.174
E	0.60	0.024
F	3.91	0.154
G	3.81	0.150
H	4.32	0.170
I	4.52	0.178
J	6.61	0.260



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN5x6	3,000	13