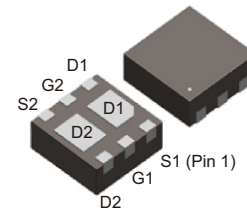


CMS05NN02A6-HF

Dual N-Channel

RoHS Device

Halogen Free



Features

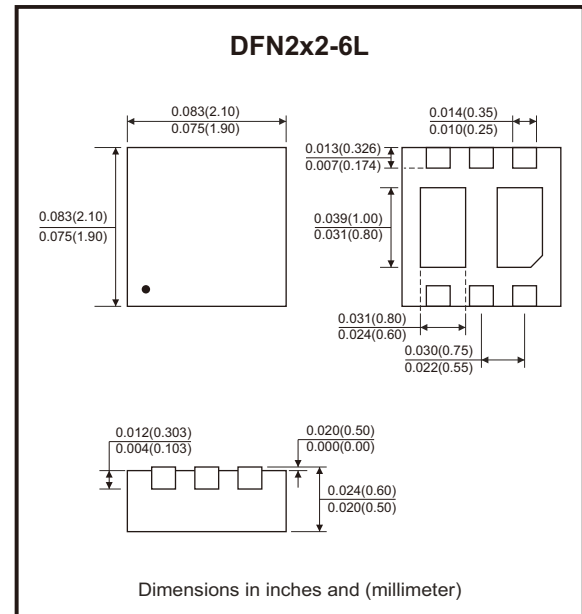
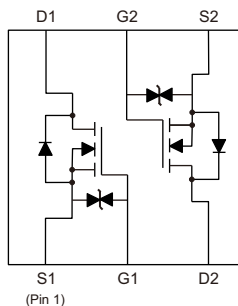
- Low on-resistance.
- Low threshold.
- Fast switching speed.
- Low gate drive.

Mechanical data

- Case: DFN2x2-6L, molded plastic.
- Terminals: Matte tin-plated leads, solderability-per MIL-STD-202, method 208.
- Mounting position: Any.

Circuit Diagram

G:Gate
S:Source
D:Drain



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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	20	V
Gate-source voltage	V_{GS}	±10	V
Continuous drain current	I_D	5	A
Pulsed drain current	I_{DM}	20	A
Power dissipation	P_D	1.13	W
Thermal resistance junction to air	$R_{\theta JA}$	110	°C/W
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Electrical Characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10, V _{DS} = 0V			±10	nA
On Characteristics						
Static drain-source on-resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 4A			22	mΩ
	R _{DS(on)}	V _{GS} = 2.5V, I _D = 3A			36	mΩ
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.45	0.7	1	V
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz		697		pF
Output capacitance	C _{oss}			110		
Reverse transfer capacitance	C _{rss}			101		
Switching Characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} = 10V, V _{GS} = 5V R _G = 3Ω ,R _L = 1.5Ω		0.5		ns
Turn-on rise time	t _r			1		
Turn-off delay time	t _{d(off)}			12		
Turn-off fall time	t _f			4		
Total gate charge	Q _g	V _{DD} = 4.5V, V _{GS} = 10V, I _D = 7A		11.2		nC
Gate to source charge	Q _{gs}			1.6		
Gate to drain (miller) charge	Q _{gd}			3.2		
Source-Drain Diode Characteristics						
Diode forward voltage	V _{SD}	I _{SD} = 1A, V _{GS} = 0V			1	V

Typical Rating and Characteristic Curves (CMS05NN02A6-HF)

Fig.1 - Typical Output Characteristics

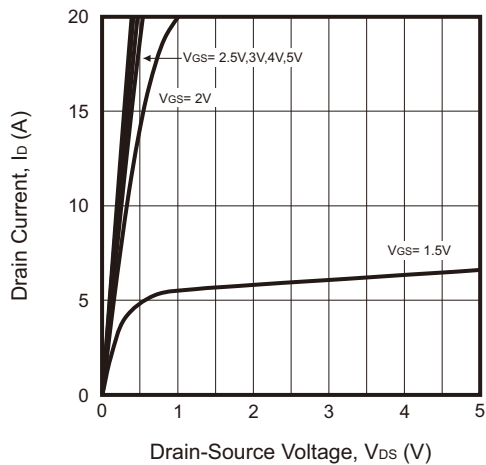


Fig.2 - On-Resistance vs. Drain Current and Gate Voltage

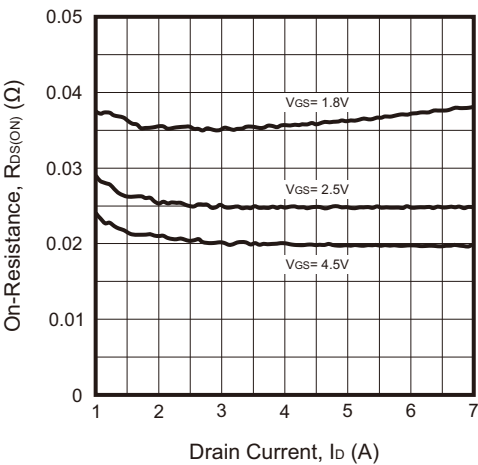


Fig.3 - On-Resistance vs. Gate-Source Voltage

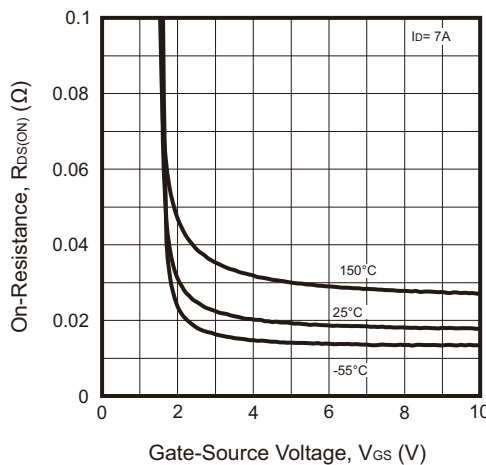


Fig.4 - Body-Diode Characteristics

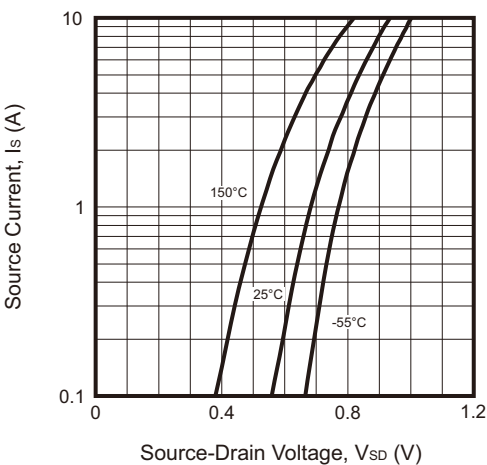


Fig.5 - On-Resistance vs. Junction Temperature

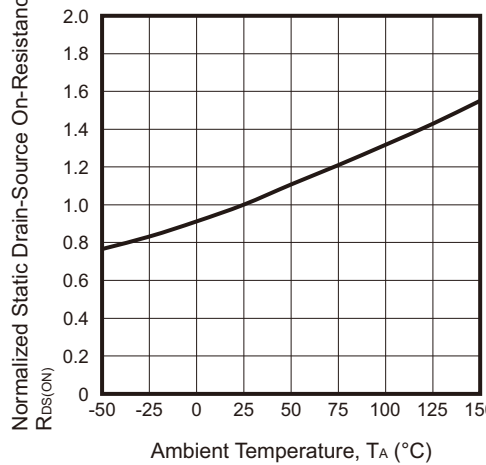
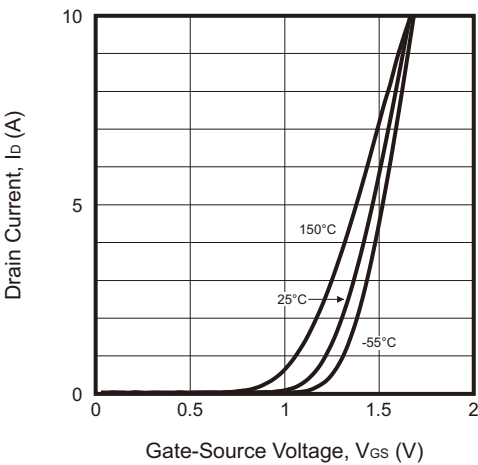


Fig.6 - Transfer Characteristics



Typical Rating and Characteristic Curves (CMS05NN02A6-HF)

Fig.7 - Capacitance Characteristics

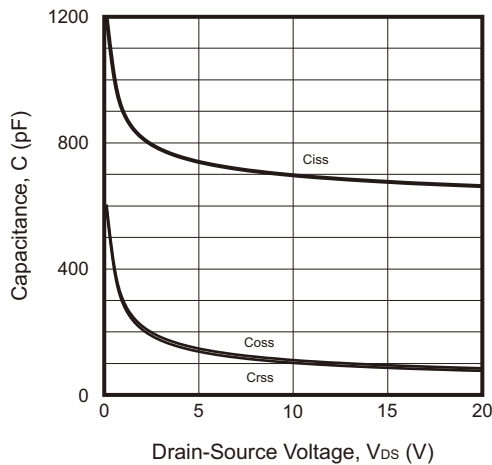


Fig.8 - Gate Charge Characteristics

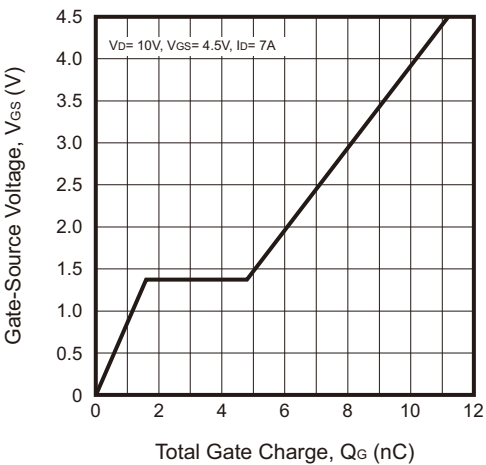


Fig.9 - Breakdown Voltage vs. Junction Temperature

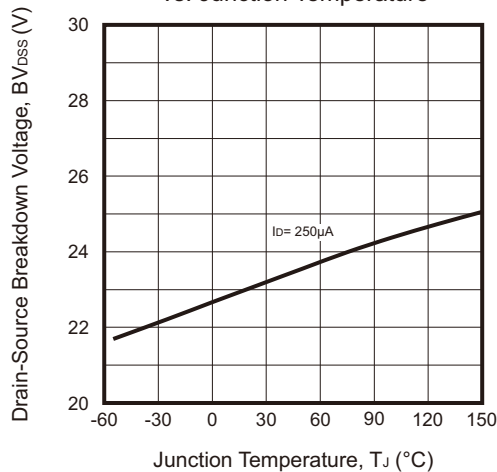
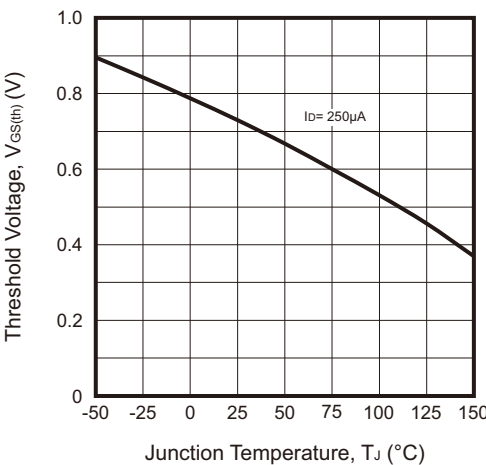
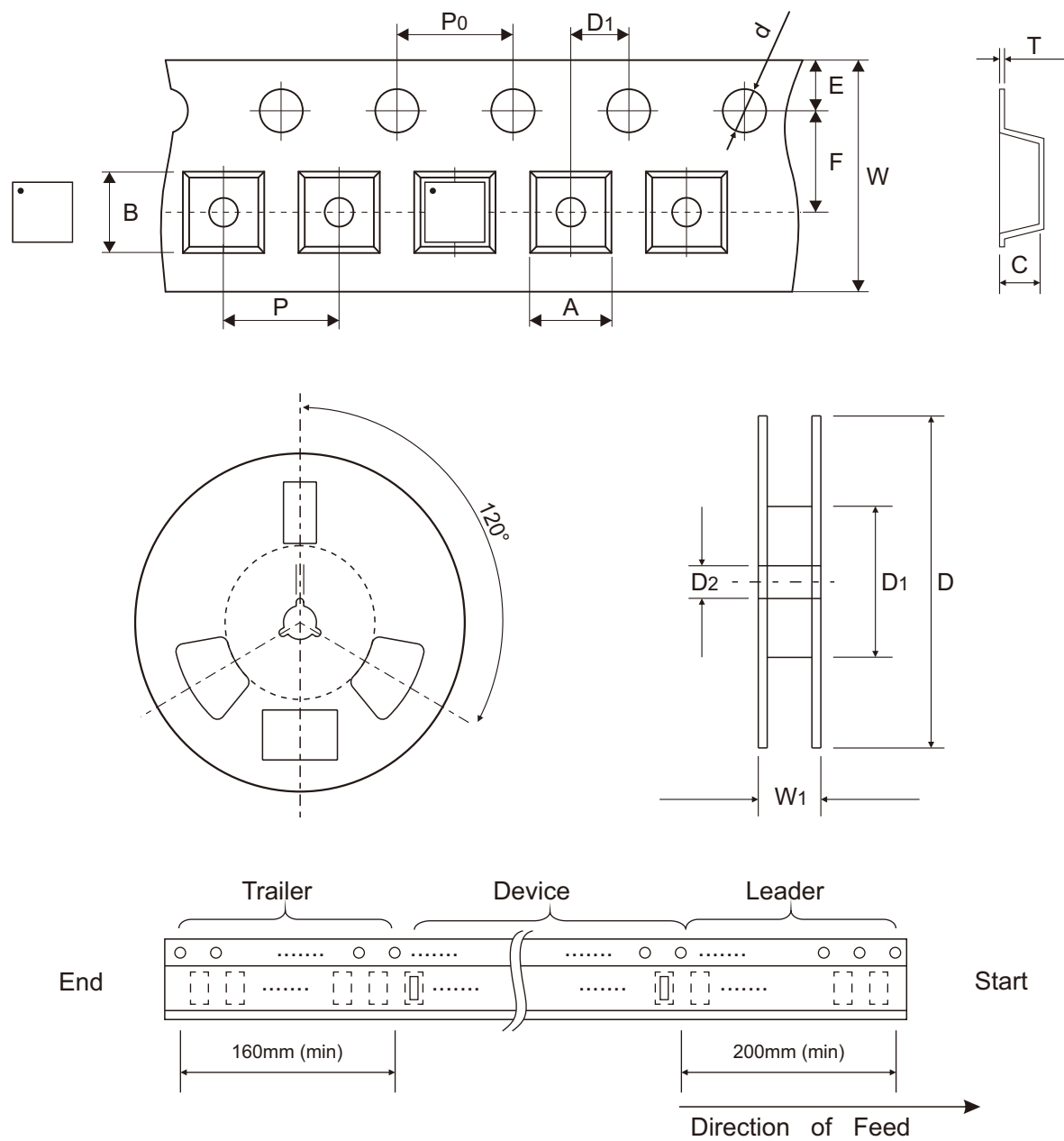


Fig.10 - $V_{GS(th)}$ vs. Junction Temperature



Reel Taping Specification

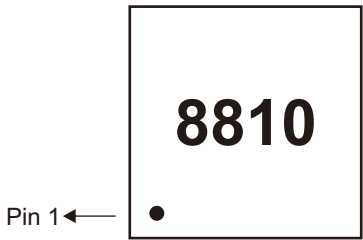


DFN2x2 -6L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.20 ± 0.05	2.20 ± 0.05	0.70 ± 0.05	1.55 ± 0.05	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.087 ± 0.002	0.087 ± 0.002	0.028 ± 0.002	0.061 ± 0.002	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

DFN2x2 -6L	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.05	8.00 + 0.30 - 0.10	12.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.002	0.315 + 0.012 - 0.004	0.492 ± 0.039

Marking Code

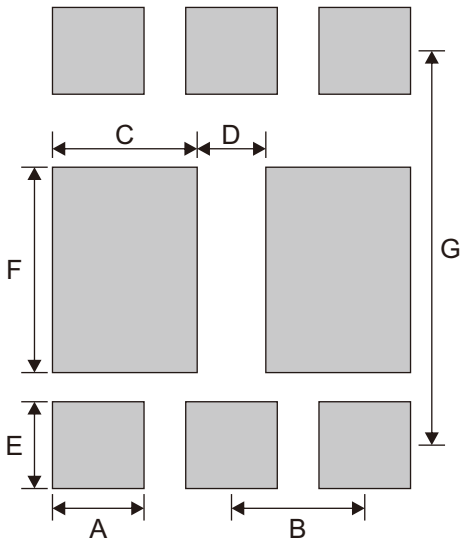
Part Number	Marking Code
CMS05NN02A6-HF	8810



XXX = Control code

Suggested P.C.B. PAD Layout

SIZE	DFN2x2-6L	
	(mm)	(inch)
A	0.45	0.018
B	0.65	0.026
C	0.70	0.028
D	0.25	0.010
E	0.425	0.017
F	1.00	0.039
G	1.725	0.068



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN2x2-6L	3,000	7