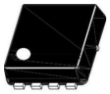
MOSFET

CMS25P06H8-HF

P-Channel
RoHS Device
Halogen Free



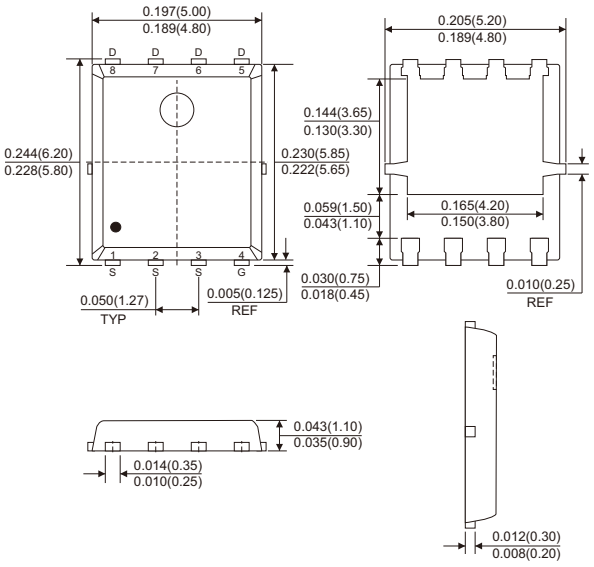
Features

- Advanced trench cell design.
- Low thermal resistance.

Mechanical data

- Case: PDFN5x6-8L, molded plastic.
- Mounting position: Any.

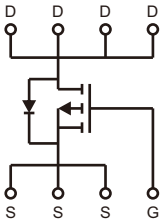
PDFN5x6-8L



Dimensions in inches and (millimeter)

Circuit Diagram

- G : Gate
- S : Source
- D : Drain



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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-60	V
Gate-source voltage	V_{GS}	±20	V
Continuous drain current	I_D	-25	A
Peak drain current, pulsed V_{GS}=10V (Note 1)	I_{DM}	-40	A
Power dissipation T_C=25°C	P_{tot}	35	W
Thermal resistance junction to case	$R_{\theta JC}$	3.5	°C/W
Thermal resistance junction to ambient	$R_{\theta JA}$	62.5	°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	I_D = -250μA	-60			V
Drain-source leakage current	I_{DSS}	V_{DS} = -24V			-1	μA
Gate leakage current	I_{GSS}	V_{GS} = ±20V			±100	nA
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1		-2	V
Drain-source on-state resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -4.1A		49	55	mΩ
		V_{GS} = -4.5V, I_D = -3A		59	65	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -30V, f = 1MHz		1408		pF
Output capacitance	C_{oss}			64		
Reverse transfer capacitance	C_{rss}			47		
Total gate charge	Q_g	V_{DS} = -30V, I_D = -10A, V_{GS} = -10V		23		nC
Gate to source charge	Q_{gs}			6.5		
Gate to drain charge	Q_{gd}			3		
Turn-on delay time	$t_{d(on)}$	V_{GEN} = -10V, V_{DS} = -30V, R_L = 3Ω, R_G = 4.5Ω		14		ns
Turn-on rise time	t_r			51		
Turn-off delay time	$t_{d(off)}$			197		
Turn-off fall time	t_f			112		
Body-Diode Characteristics						
Drain-source diode forward voltage	V_{SD}	I_S = -2A, V_{GS} = 0V			1.2	V
Reverse recovery time	t_{rr}	I_{SD} = -10A, dI_{SD}/dt = 100A/μs		25		ns
Reverse recovery charge	Q_{rr}			7.5		nC

Notes: 1. Pulse width ≤ 300μs, duty cycle ≤ 2%.

2. Guaranteed by design, not subject to production testing.

Rating and Characteristic Curves (CMS25P06H8-HF)

Fig.1 - Output Characteristics

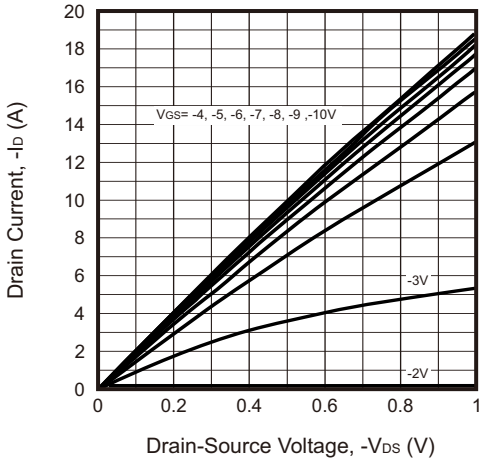


Fig.2 - Drain-Source on Resistance

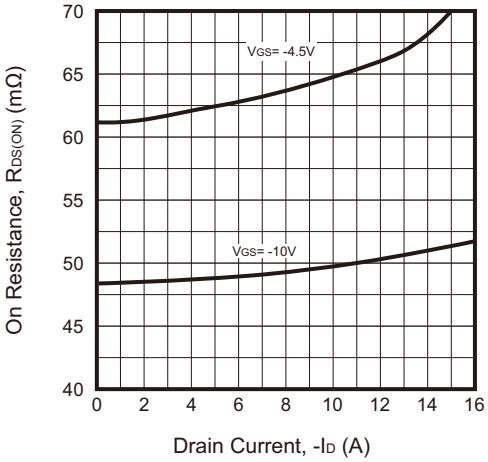


Fig.3 - Transfer Characteristics

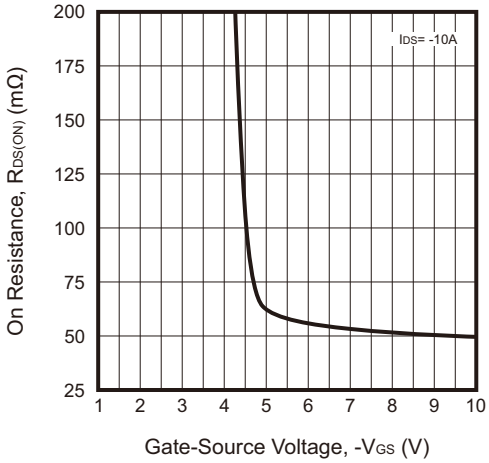


Fig.4 - Gate Threshold Voltage

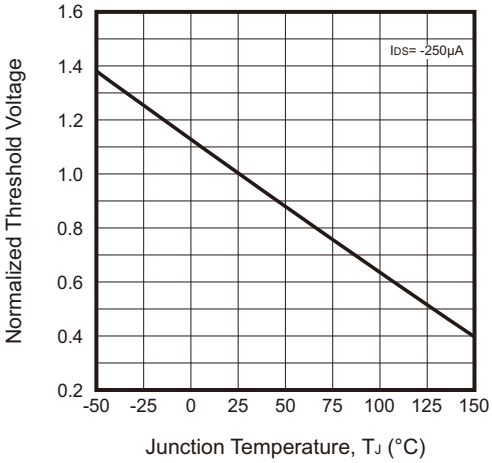


Fig.5 - Drain-Source on Resistance

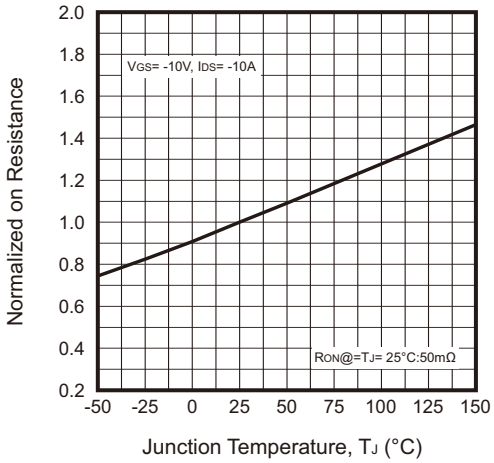
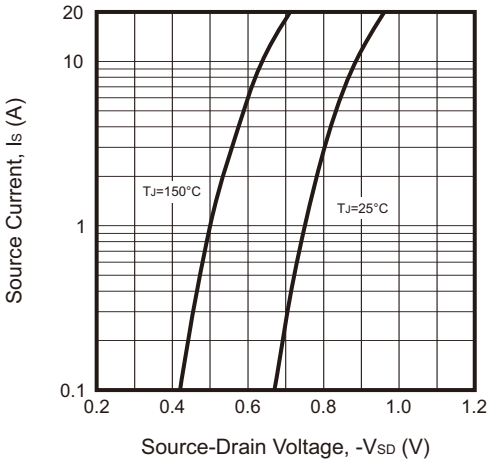


Fig.6 - Source-Drain Diode Forward



Rating and Characteristic Curves (CMS25P06H8-HF)

Fig.7 - Capacitance

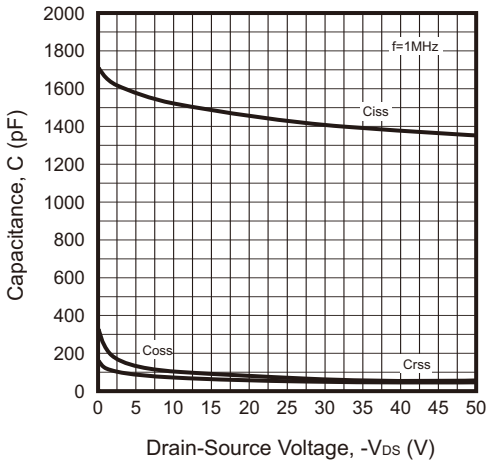


Fig.8 - Gate Charge

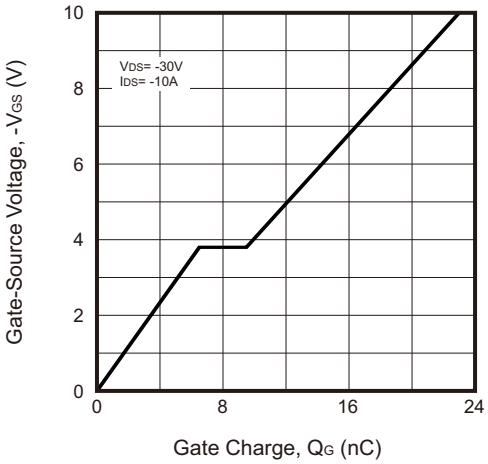


Fig.9 - Power Dissipation

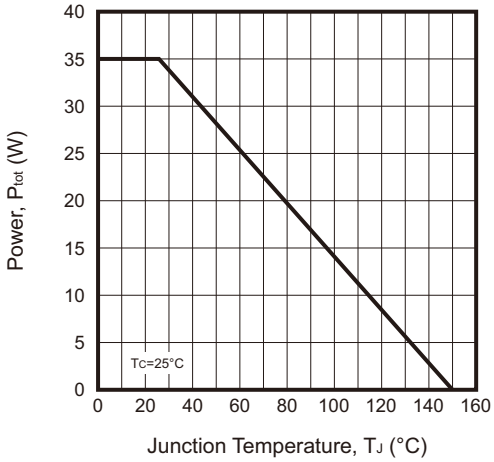


Fig.10 - Drain Current

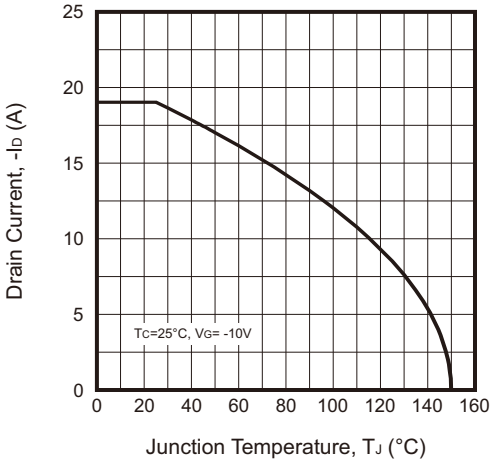
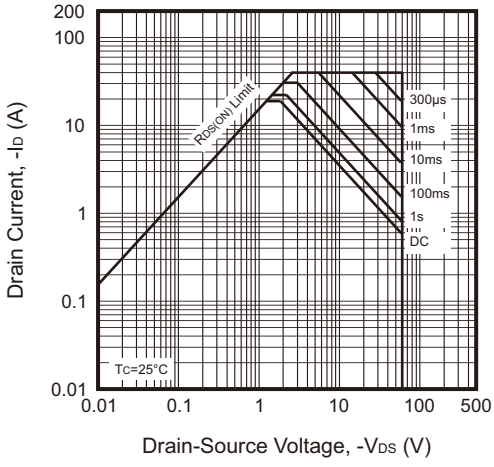
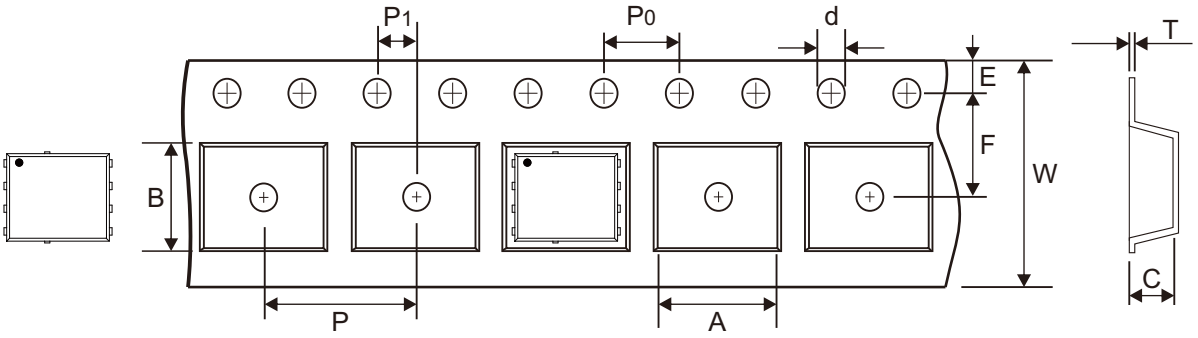
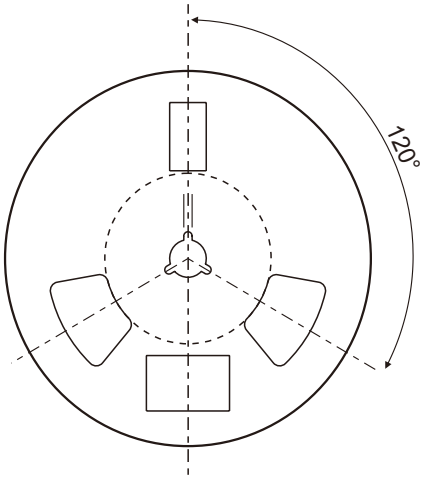


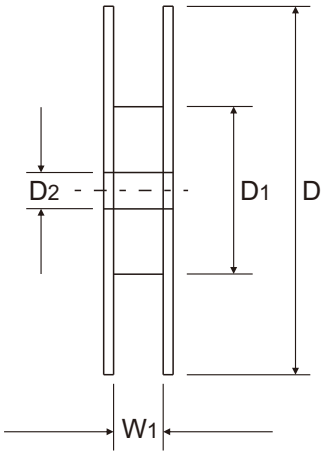
Fig.11 - Safe Operation Area

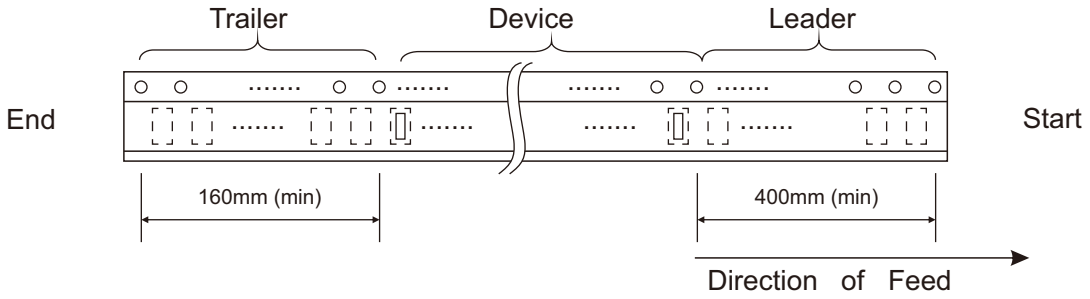


Reel Taping Specification







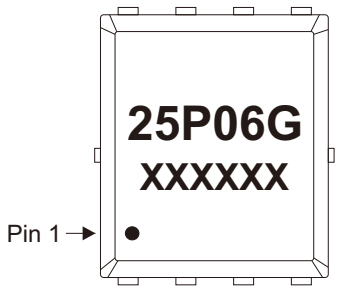


	SYMBOL	A	B	C	d	D	D1	D2
PDFN5x6 -8L	(mm)	6.60 ± 0.10	5.50 ± 0.10	1.30 ± 0.05	1.55 ± 0.05	331 ± 1.00	101 ± 2.00	13.30 ± 0.20
	(inch)	0.260 ± 0.004	0.217 ± 0.004	0.051 ± 0.002	0.061 ± 0.002	13.031 ± 0.039	3.976 ± 0.079	0.524 ± 0.008

	SYMBOL	E	F	P	P0	P1	T	W	W1
PDFN5x6 -8L	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.25 ± 0.05	12.00 + 0.30 − 0.10	15.50 ± 3.00
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.010 ± 0.002	0.472 + 0.012 − 0.004	0.610 ± 0.118

Marking Code

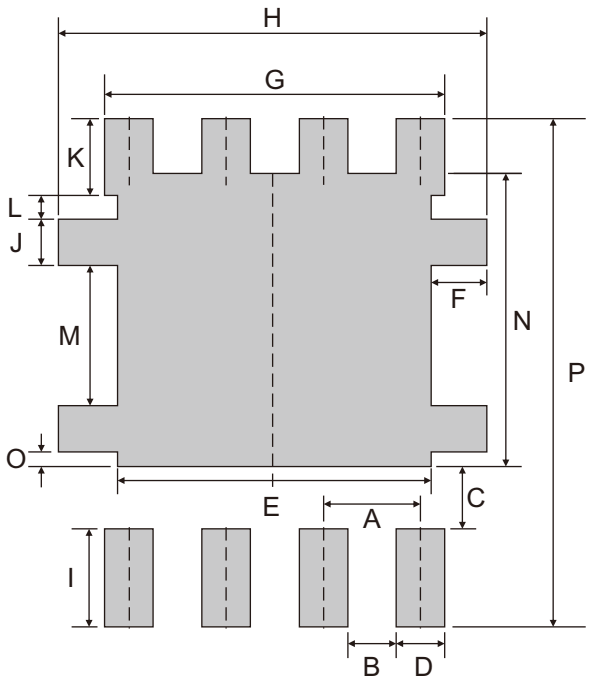
Part Number	Marking Code
CMS25P06H8-HF	25P06G



xxxxxx = Control code

Suggested P.C.B. PAD Layout

SIZE	PDFN5x6-8L	
	(mm)	(inch)
A	1.27	0.050
B	0.66	0.026
C	0.82	0.032
D	0.61	0.024
E	4.10	0.161
F	0.755	0.030
G	4.42	0.174
H	5.61	0.221
I	1.27	0.050
J	0.60	0.024
K	1.02	0.040
L	0.295	0.012
M	1.825	0.072
N	3.81	0.150
O	0.18	0.007
P	6.61	0.260



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
PDFN5x6-8L	5,000	13