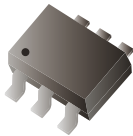


CMS07P02T6-HF

P-Channel
RoHS Device
Halogen Free



Features

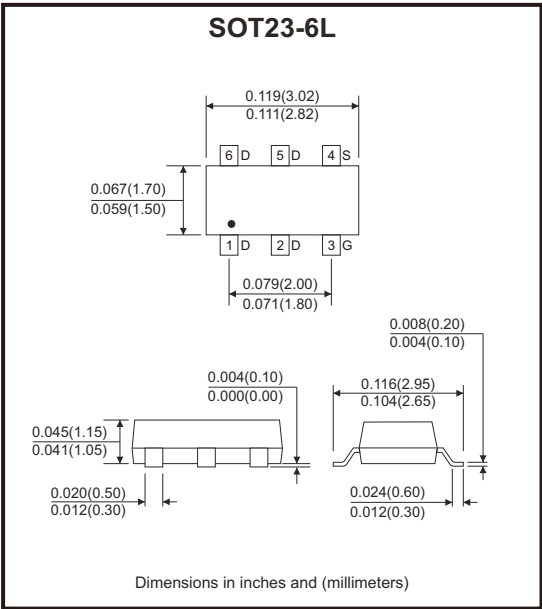
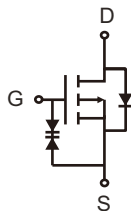
- High power and current handling capability.
- Surface mount package.

Mechanical data

- Case: SOT23-6L, molded plastic.

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
Drain current-continuous	I_D	-7	A
Drain current-pulsed (Note 1)	I_{DM}	-30	
Maximum power dissipation	P_D	1.5	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C
Thermal resistance, junction to ambient (Note 2)	$R_{\theta JA}$	83.3	°C/W

Notes: 1. Repetitive rating: Pulse width limited by maximum junction temperature.

2. Surface mounted on FR4 board, $t \leq 10$ sec.

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off 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} = ±10V, V _{DS} = 0V			±10	
On characteristics (Note 2)						
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.35	-0.65	-0.9	V
Drain-source on-state resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -4A		27.8	35	mΩ
		V _{GS} = -2.5V, I _D = -4A		35.6	45	
Forward transconductance	g _{fs}	V _{DS} = -5V, I _D = -4A	8			S
Dynamic characteristics (Note 3)						
Input capacitance	C _{iss}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		1134		pF
Output capacitance	C _{oss}			160		
Reverse transfer capacitance	C _{rss}			121		
Switching characteristics (Note 3)						
Turn-on delay time	t _{d(on)}	V _{DD} = -10V, R _L = 2.5Ω V _{GS} = -4.5V, R _{GEN} = 3Ω,		12		nS
Turn-on rise time	t _r			10		
Turn-off delay time	t _{d(off)}			19		
Turn-off fall time	t _f			25		
Total gate charge	Q _g	V _{DS} = -10V, I _D = -4A, V _{GS} = -4.5		12.8		nC
Gate-source charge	Q _{gs}			1.7		
Gate-drain charge	Q _{gd}			3.2		
Drain-source diode characteristics						
Diode forward voltage (Note 2)	V _{SD}	V _{GS} = 0V, I _S = -4A			-1.2	V
Continuous source current (Note 1)	I _S				-7	A

Notes: 1. Surface mounted on FR4 board, t ≤ 10 sec.

2. Pulse width ≤ 300μs, duty cycle ≤ 2%.

3. Guaranteed by design, not subject to production.

Rating and Characteristic Curves (CMS07P02T6-HF)

Fig.1 - Power Dissipation

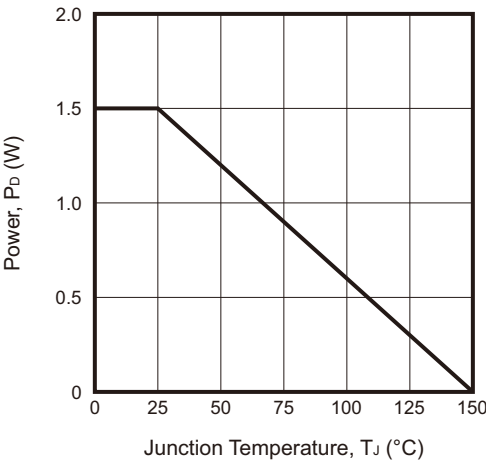


Fig.2 - Safe Operating Area

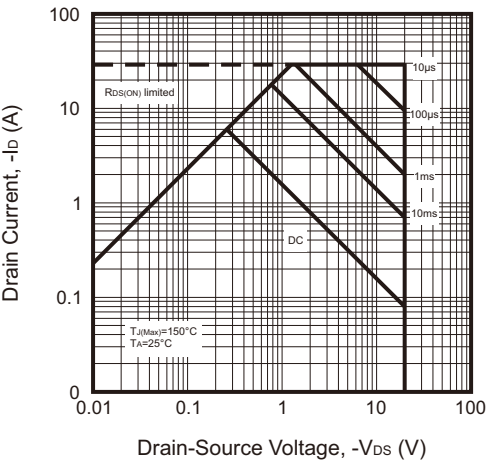


Fig.3 - Output Characteristics

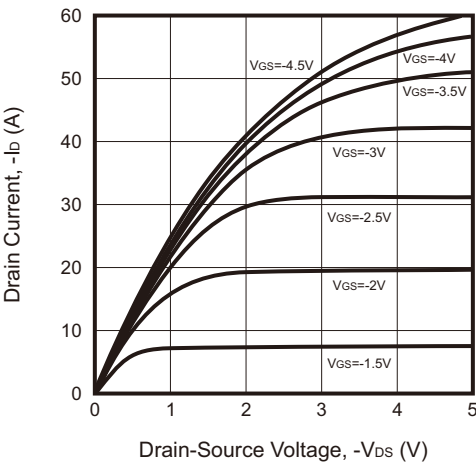


Fig.4 - Drain-Source On-Resistance

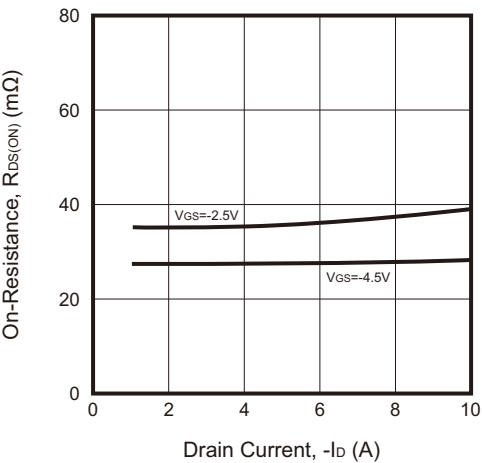


Fig.5 - Transfer Characteristics

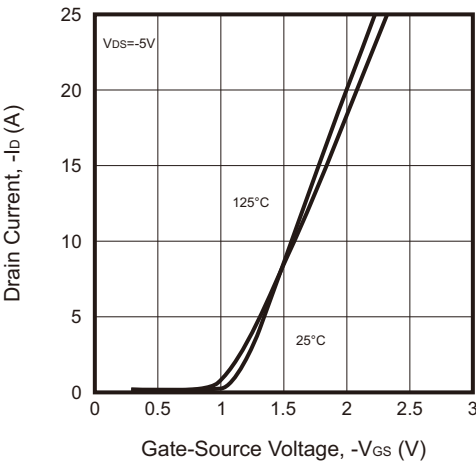
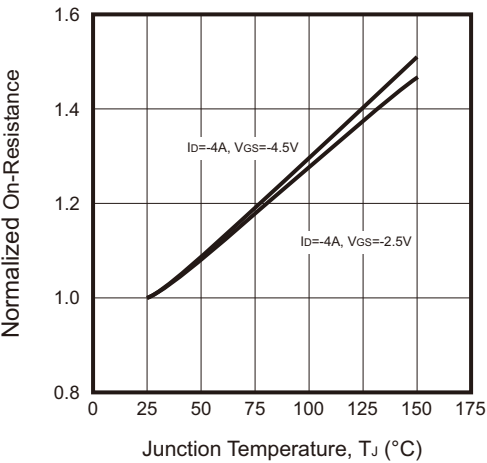


Fig.6 - Drain-Source On-Resistance



Rating and Characteristic Curves (CMS07P02T6-HF)

Fig.7 - $R_{DS(ON)}$ vs V_{GS}

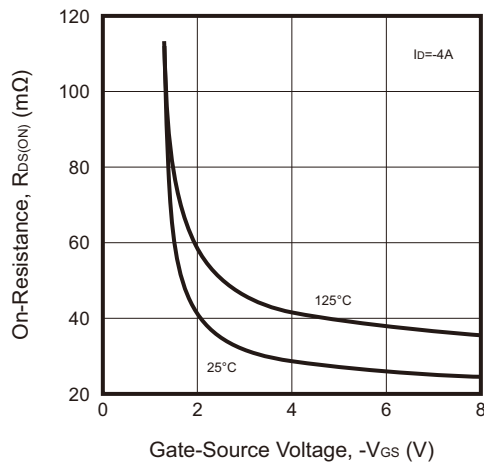


Fig.8 - Capacitance vs V_{DS}

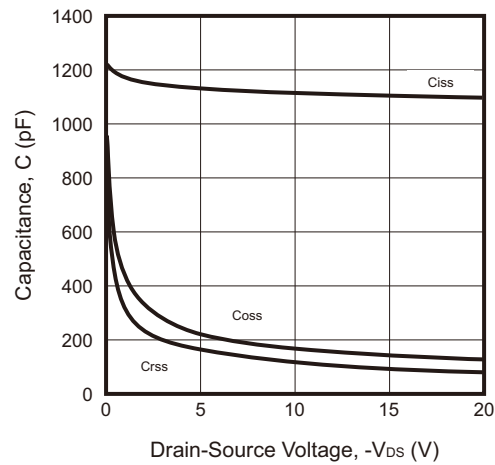


Fig.9 - Gate Charge

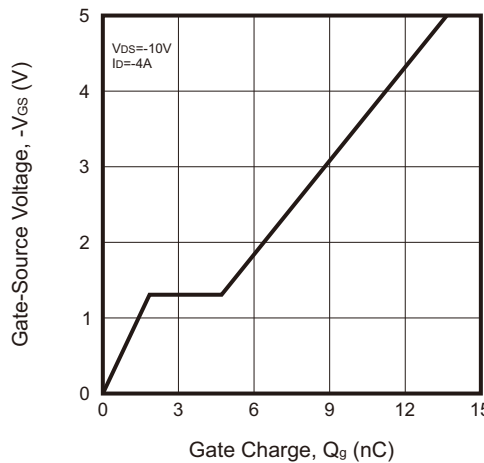
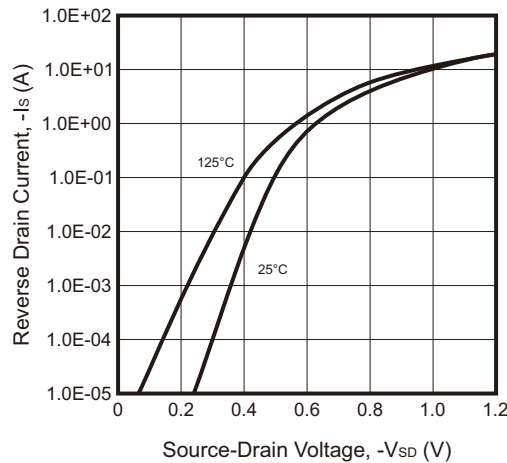
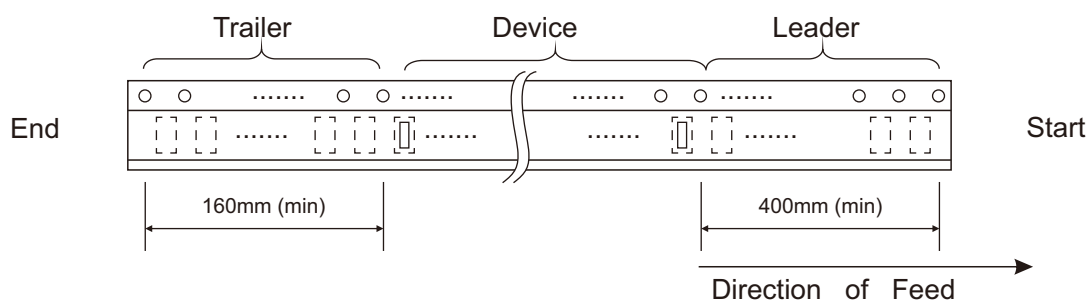
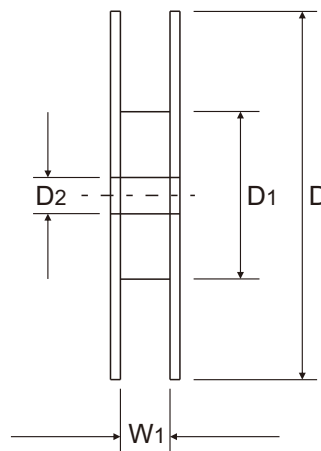
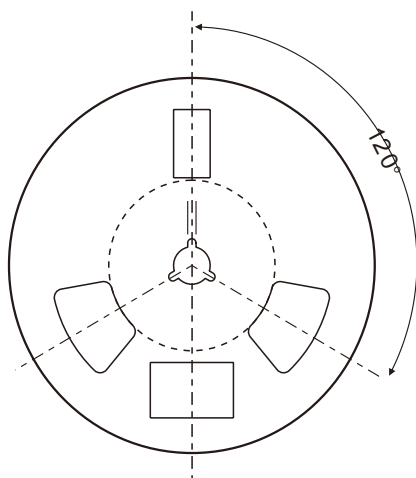


Fig.10 - Source-Drain Diode Forward



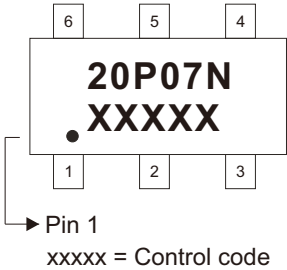


SOT23-6L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.30 ± 0.10	3.24 ± 0.10	1.45 ± 0.10	1.50 + 0.10 - 0.00	178 ± 0.50	54.5 + 2.50 - 0.00	13.00 + 0.35 - 0.15
	(inch)	0.130 ± 0.004	0.128 ± 0.004	0.057 ± 0.004	0.059 + 0.004 - 0.000	7.008 ± 0.020	2.146 + 0.098 - 0.000	0.512 + 0.014 - 0.006

SOT23-6L	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.23 ± 0.04	8.00 + 0.30 - 0.10	12.00 + 1.50 - 0.50
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.009 ± 0.002	0.315 + 0.012 - 0.004	0.472 + 0.059 - 0.020

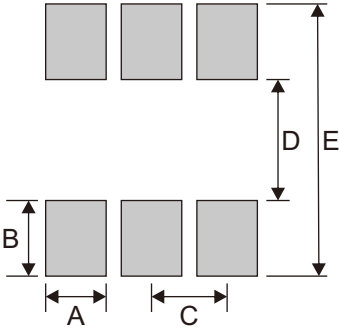
Marking Code

Part Number	Marking Code
CMS07P02T6-HF	20P07N XXXXX



Suggested P.C.B. PAD Layout

SIZE	SOT23-6L	
	(mm)	(inch)
A	0.80 Max	0.031 Max
B	1.00 Max	0.039 Max
C	1.00 Max	0.039 Max
D	1.70 Max	0.067 Max
E	3.60 Max	0.142 Max



Note: 1. The pad layout is for reference purpose only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT23-6L	3,000	7