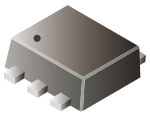
MOSFET

CMSN3134KH6-HF

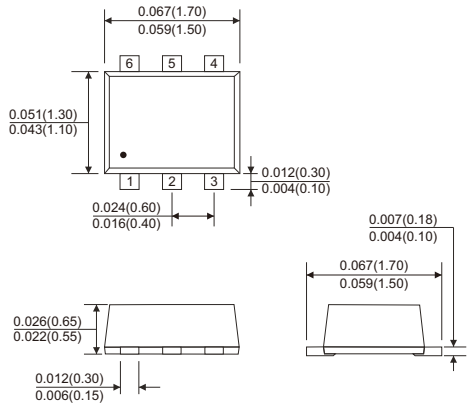
Dual N-Channel
RoHS Device
Halogen Free



Features

- ESD protected up to 2kV (HBM).
- High power and current handling capability.
- Surface mount package.

SOT-563



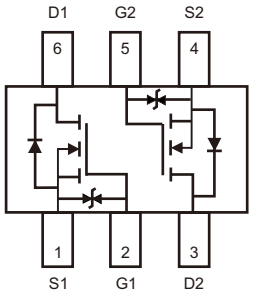
Dimensions in inches and (millimeters)

Mechanical data

- Case: SOT-723, molded plastic.
- Terminals: Tin plated, solderable per MIL-STD-750, method 2026.
- 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}	±12	V
Drain current	T_A=25°C @Steady state	I_D	0.5	A
	T_A=70°C @Steady state		0.4	
Pulsed drain current (Note 1)		I_{DM}	3.3	A
Total power dissipation	T_A=25°C	P_D	0.18	W
Thermal resistance junction to ambient @Steady state		$R_{\theta JA}$	694	°C/W
Junction and storage temperature range		T_J, T_{STG}	-55 to +150	°C

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

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Parameters						
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		2.5	±10	μA
		V_{GS} = ±8V, V_{DS} = 0V		500	±2000	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.35	0.75	1.1	V
Static drain-source on-resistance	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 0.5A		220	300	mΩ
		V_{GS} = 2.5V, I_D = 0.45A		290	400	
		V_{GS} = 1.8V, I_D = 0.2A		420	700	
Diode forward voltage (Note 1)	V_{SD}	I_S = 0.5A, V_{GS} = 0V		0.85	1.2	V
Max. body-diode continuous current	I_S				0.5	A
Gate resistance	R_G	f = 1MHZ, Open drain		50		Ω
Dynamic Parameters (Note 2)						
Input capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz		33		pF
Output capacitance	C_{oss}			20		
Reverse transfer capacitance	C_{rss}			10		
Switching Parameters (Note 2)						
Total gate charge	Q_g	V_{GS} = 4.5V, V_{DS} = 10V, I_D = 0.5A		0.8		nC
Gate-source charge	Q_{gs}			0.3		
Gate-drain charge	Q_{gd}			0.15		
Reverse recovery charge	Q_{rr}	I_F = 0.5A, di / dt = 20A/μs		0.4		
Reverse recovery time	t_{rr}			14.4		ns
Turn-on delay time	$t_{d(on)}$	V_{GS} = 4.5V, V_{DD} = 10V, R_G = 10Ω, I_D = 500mA		4		
Turn-on rise time	t_r			18.8		
Turn-off delay time	$t_{d(off)}$			10		
Turn-off fall time	t_f			23		

Notes: 1. Pulse width ≤ 300μs, duty cycle ≤ 0.5%.

2. These parameters have no way to verify.

Typical Rating and Characteristic Curves (CMSN3134KH6-HF)

Fig.1 - Output Characteristics

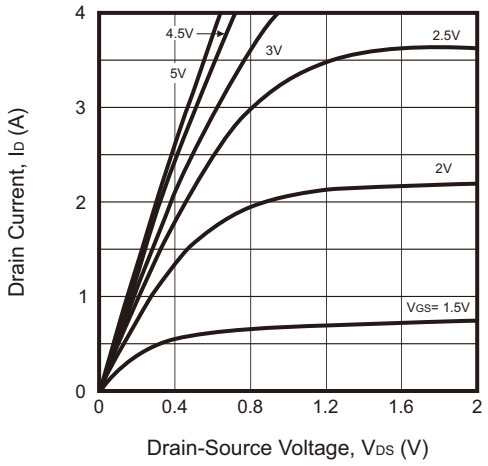


Fig.2 - Transfer Characteristics

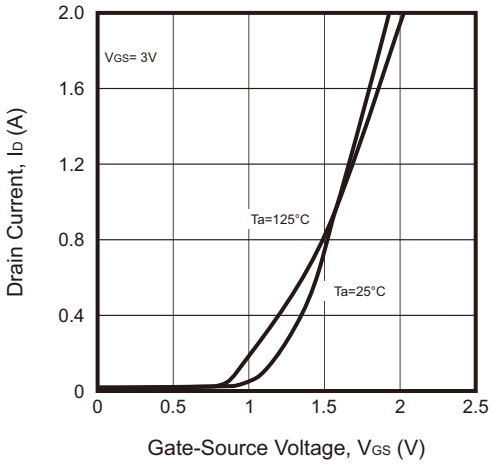


Fig.3 - Capacitance Characteristics

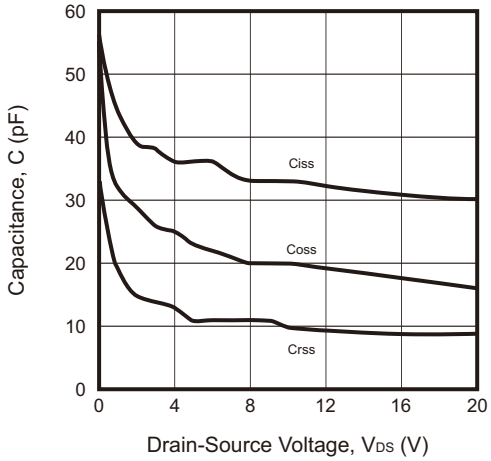


Fig.4 - Gate Charge

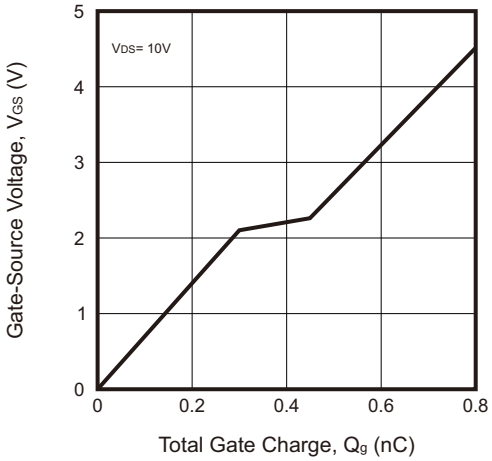


Fig.5 - ODrain Source on Resistance

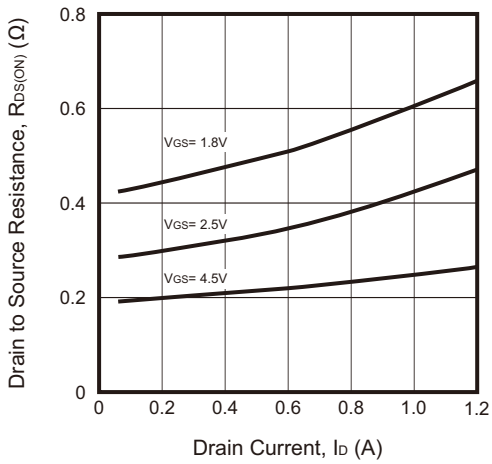
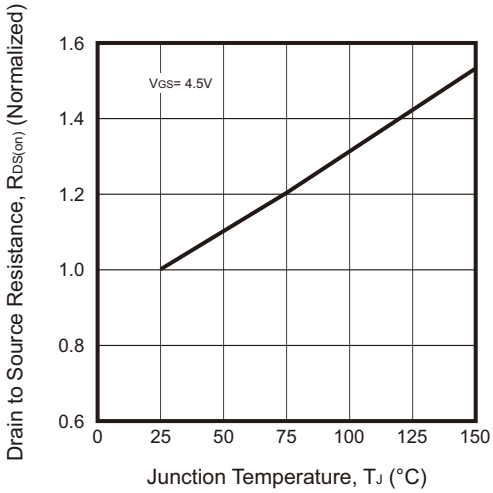
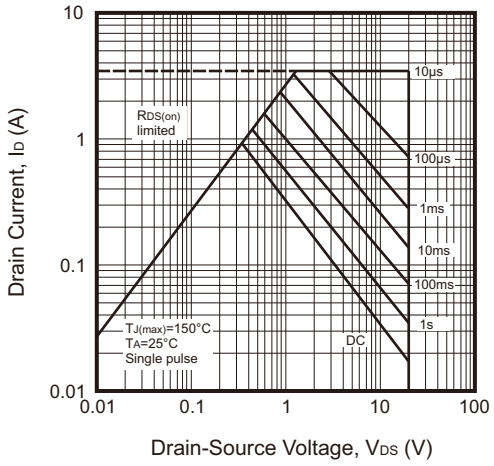


Fig.6 - Drain Source on Resistance

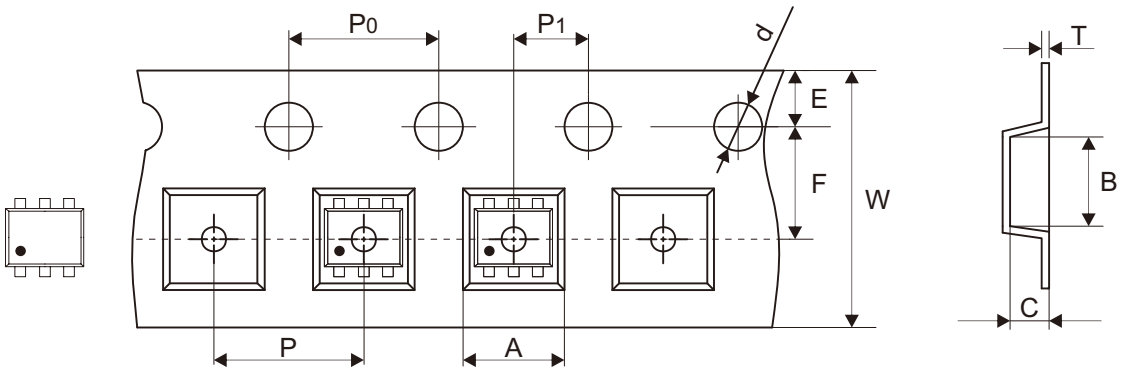


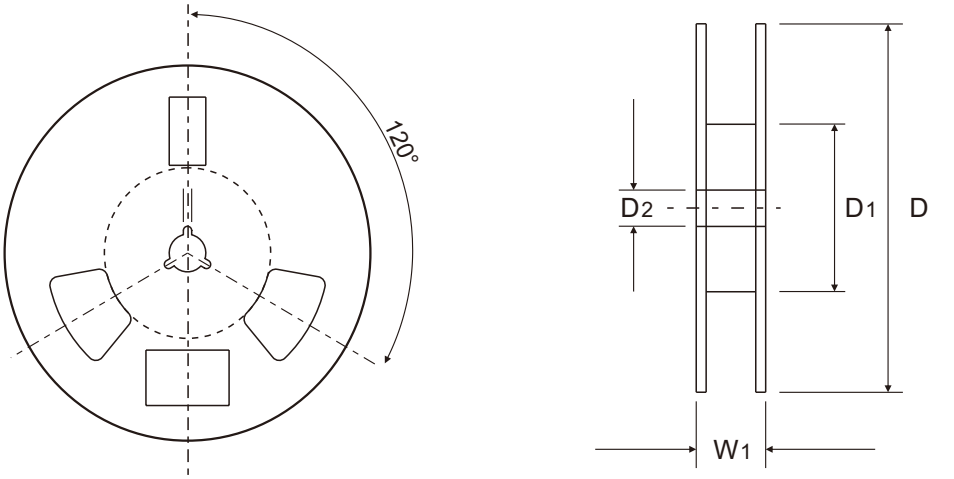
Typical Rating and Characteristic Curves (CMSN3134KH6-HF)

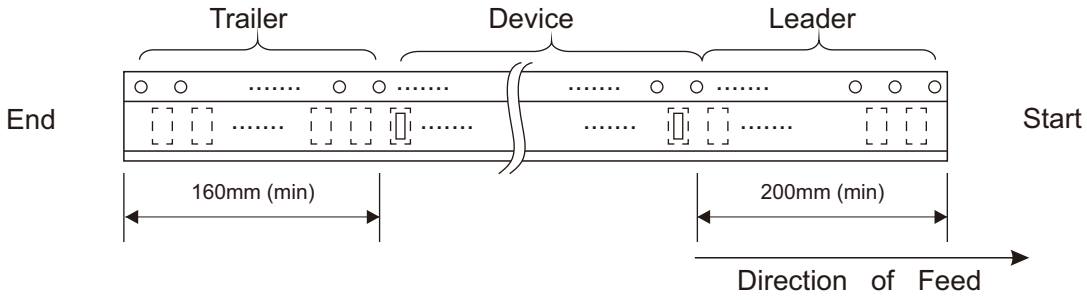
Fig.7 - Safe Operation Area



Reel Taping Specification





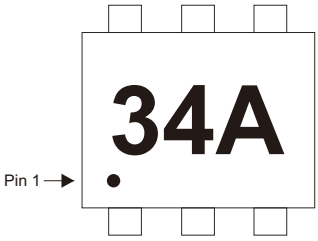


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-563	(mm)	1.78 ± 0.05	1.78 ± 0.05	0.69 ± 0.05	1.55 ± 0.05	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.070 ± 0.002	0.070 ± 0.002	0.027 ± 0.002	0.061 ± 0.002	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

	SYMBOL	E	F	P	P_0	P_1	T	W	W_1
SOT-563	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.03	8.00 + 0.30 − 0.10	12.30 ± 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 ± 0.001	0.315 + 0.012 − 0.004	0.484 ± 0.039

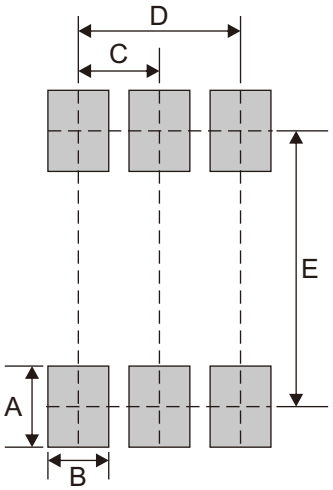
Marking Code

Part Number	Marking Code
CMSN3134KH6-HF	34A



Suggested P.C.B. PAD Layout

SIZE	SOT-563	
	(mm)	(inch)
A	0.50	0.020
B	0.375	0.015
C	0.50	0.020
D	1.00	0.039
E	1.70	0.067



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-563	3,000	7