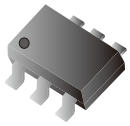
CMSN3134KDW-HF

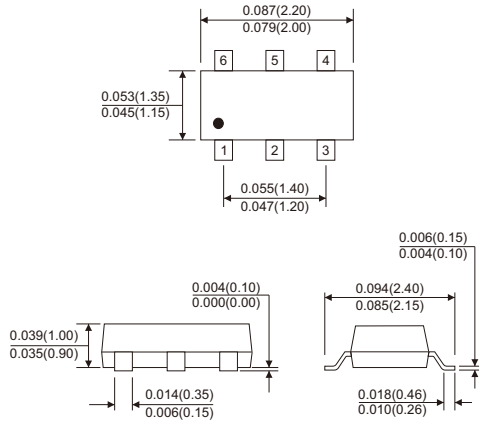
Dual N-Channel
RoHS Device
Halogen Free



Features

- Surface mount package.
- N-Channel switch with Low $R_{DS(on)}$.
- Operated at low logic level gate dive.

SOT-363



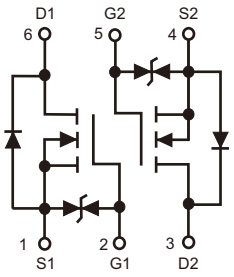
Dimensions in inches and (millimeter)

Mechanical data

- Case: SOT-363, molded plastic.
- 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
Typical gate-source voltage	V_{GS}	±12	V
Continuous drain current (t ≤ 10s)	I_D	0.75	A
Power dissipation (Note 1)	P_D	0.15	W
Thermal resistance from junction to ambient	$R_{\theta JA}$	833	°C/W
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

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

Electrical Characteristics (at Ta=25°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} = ±10V, V_{DS} = 0V			±20	μA
Gate threshold voltage (Note 1)	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.35	0.54	1.1	V
Drain-source on-state resistance (Note 1)	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 0.65A		270	380	mΩ
		V_{GS} = 2.5V, I_D = 0.55A		320	450	
		V_{GS} = 1.8V, I_D = 0.45A		390	800	
Forward transconductance (Note 1)	g_{fs}	V_{DS} = 10V, I_D = 0.8A		1.6		S
Drain forward voltage (Note 1)	V_{SD}	I_S = 0.15A, V_{GS} = 0V			1.2	V
Dynamic characteristics (Note 2)						
Input capacitance	C_{iss}	V_{DS} = 16V, V_{GS} = 0V, f = 1MHz		79	120	pF
Output capacitance	C_{oss}			13	20	
Reverse transfer capacitance	C_{rss}			9	15	
Switching characteristics (Note 2)						
Turn-on delay time	$t_{d(on)}$	V_{GS} = 4.5V, V_{DS} = 10V I_D = 0.5A, R_{GEN} = 10Ω		6.7		nS
Turn-on rise time	t_r			4.8		
Turn-off delay time	$t_{d(off)}$			17.3		
Turn-off fall time	t_f			7.4		
Total gate charge	Q_g	V_{DS} = 10V, V_{GS} = 4.5V, I_D = 0.25A		750		pC
Gate-source charge	Q_{gs}			75		
Gate-drain charge	Q_{gd}			225		

Notes: 1. Pulse width ≤ 300μs, duty cycle ≤ 0.5%.
2. Guaranteed by design, not subject to production.

Typical Rating and Characteristic Curves (CMSN3134KDW-HF)

Fig.1 - Output Characteristics

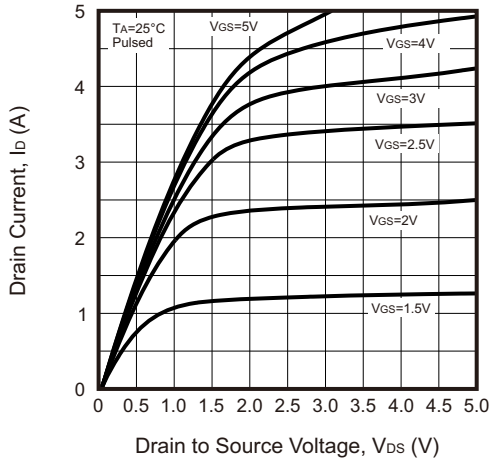


Fig.2 - Transfer Characteristics

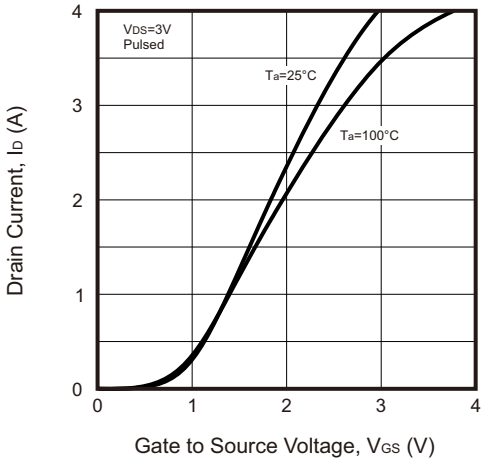


Fig.3 - $R_{DS(ON)}$ — I_D

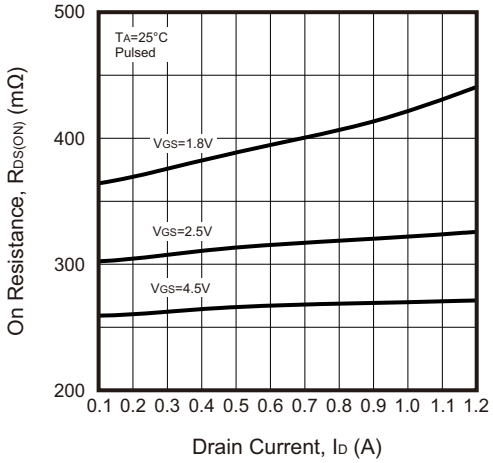


Fig.4 - On-Resistance vs. Gate to Source Voltage

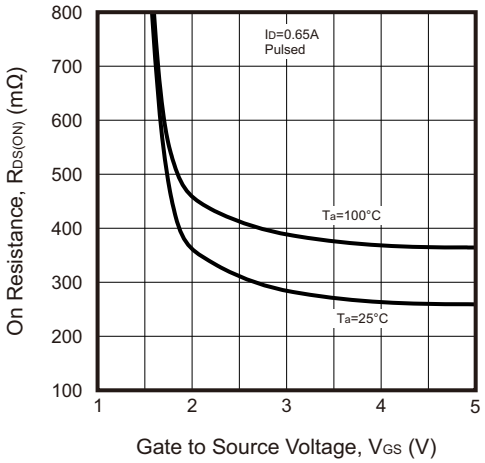


Fig.5 - I_S — V_{SD}

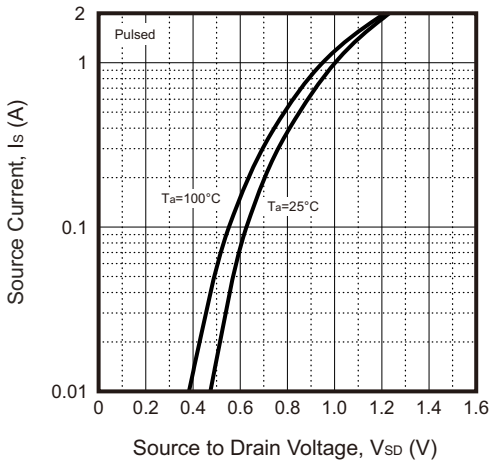
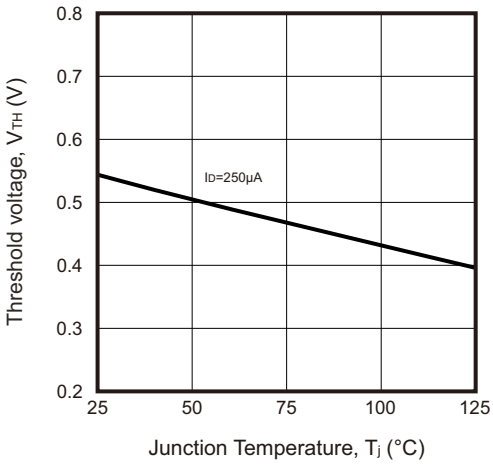
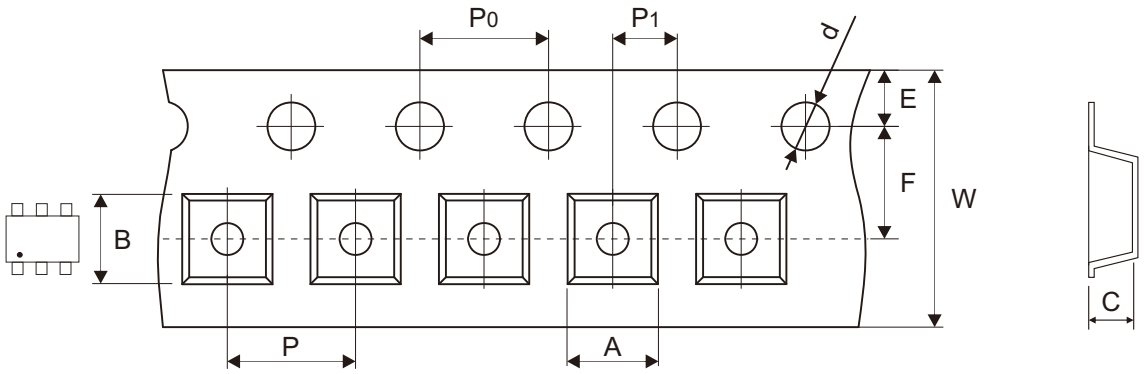
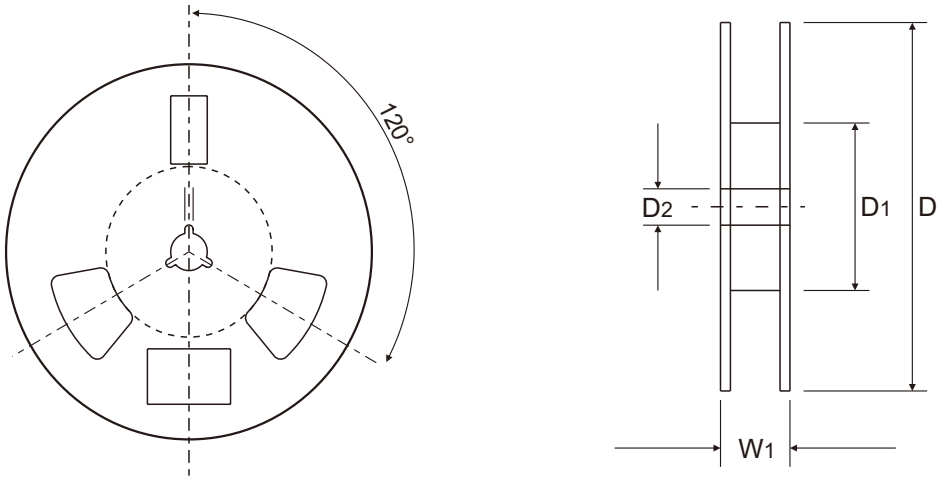


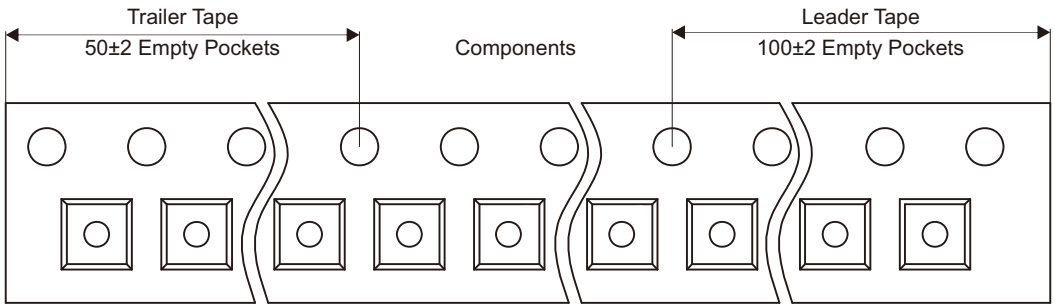
Fig.6 - Threshold Voltage



Reel Taping Specification





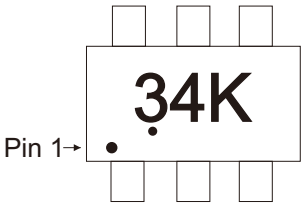


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-363	(mm)	2.25 ± 0.13	2.55 ± 0.10	1.20 ± 0.10	1.50 + 0.10 − 0.00	178.00 ± 0.10	54.40 ± 0.40	13.00 ± 0.20
	(inch)	0.089 ± 0.005	0.100 ± 0.004	0.047 ± 0.004	0.059 + 0.004 − 0.000	7.008 ± 0.004	2.142 ± 0.016	0.512 ± 0.008

	SYMBOL	E	F	P	P_0	P_1	W	W_1
SOT-363	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 + 0.30 − 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 + 0.012 − 0.004	0.484 ± 0.039

Marking Code

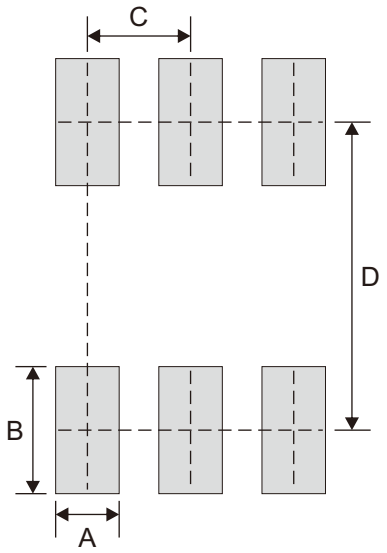
Part Number	Marking Code
CMSN3134KDW-HF	34K



Solid dot = Control code

Suggested P.C.B. PAD Layout

SIZE	SOT-363	
	(mm)	(inch)
A	0.40	0.016
B	0.80	0.031
C	0.65	0.026
D	1.94	0.076



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-363	3,000	7