CMSH5-20 CMSH5-60
CMSH5-40 CMSH5-100

SURFACE MOUNT SILICON SCHOTTKY RECTIFIERS 5.0 AMP, 20 THRU 100 VOLT



SMC CASE

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMSH5-20 series 5.0 Amp surface mount silicon Schottky rectifiers are highly reliable components designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

MARKING CODE: SEE MARKING CODE TABLE ON FOLLOWING PAGE

FEATURES:

- High reliability
- Special selections available
- "C" bend construction provides strain relief when mounted on PC board

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMSH5 -20	CMSH5 -40	CMSH5 -60	CMSH5 -100	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	100	V
DC Blocking Voltage	V_R	20	40	60	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	70	V
Average Forward Current (T_A=75°C)	I_O		5.0			A
Peak Forward Surge Current, tp=8.3ms	I_{FSM}		125			A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +150			°C
Thermal Resistance	Θ_{JL}		10			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

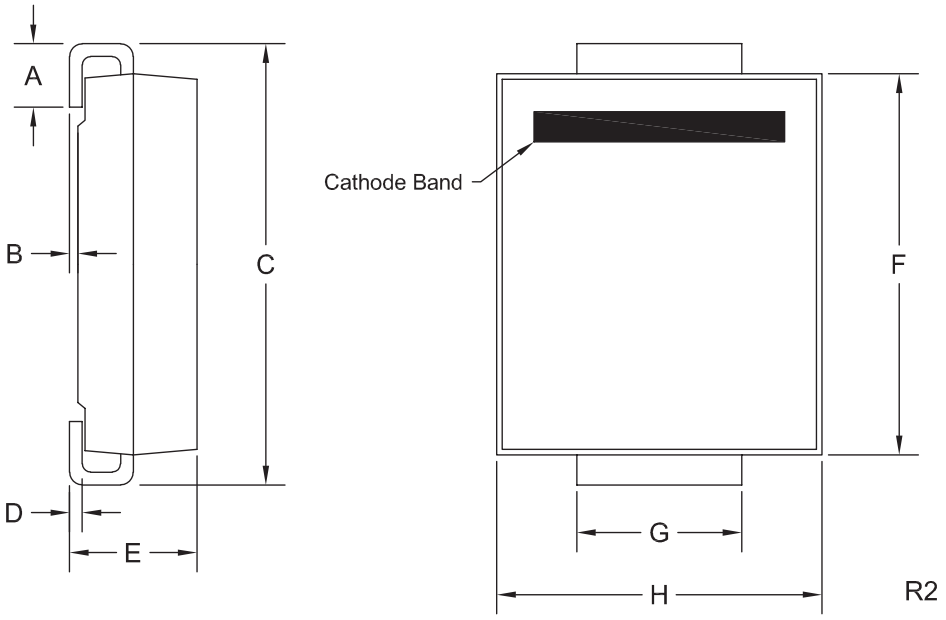
SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
I_R	V_R=Rated V_{RRM}		3.0	mA
I_R	V_R=Rated V_{RRM}, T_A=100°C		20	mA
V_F	I_F=5.0A (CMSH5-20)	0.48	0.55	V
V_F	I_F=5.0A (CMSH5-40)	0.49	0.55	V
V_F	I_F=5.0A (CMSH5-60)	0.62	0.75	V
V_F	I_F=5.0A (CMSH5-100)	0.79	0.85	V
C_J	V_R=0.1V, f=1.0MHz (CMSH5-20)	724		pF
C_J	V_R=0.1V, f=1.0MHz (CMSH5-40)	708		pF
C_J	V_R=0.1V, f=1.0MHz (CMSH5-60)	525		pF
C_J	V_R=0.1V, f=1.0MHz (CMSH5-100)	476		pF

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CMSH5-20 CMSH5-60
CMSH5-40 CMSH5-100

SURFACE MOUNT SILICON SCHOTTKY RECTIFIERS 5.0 AMP, 20 THRU 100 VOLT

SMC CASE - MECHANICAL OUTLINE



DEVICE	MARKING CODE
CMSH5-20	CS520
CMSH5-40	CS540
CMSH5-60	CS560
CMSH5-100	CS5100

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.002	0.008	0.05	0.20
C	0.305	0.320	7.75	8.13
D	0.006	0.012	0.15	0.31
E	0.079	0.103	2.00	2.62
F	0.260	0.280	6.60	7.11
G	0.108	0.128	2.75	3.25
H	0.220	0.245	5.59	6.22

SMC (REV: R2)

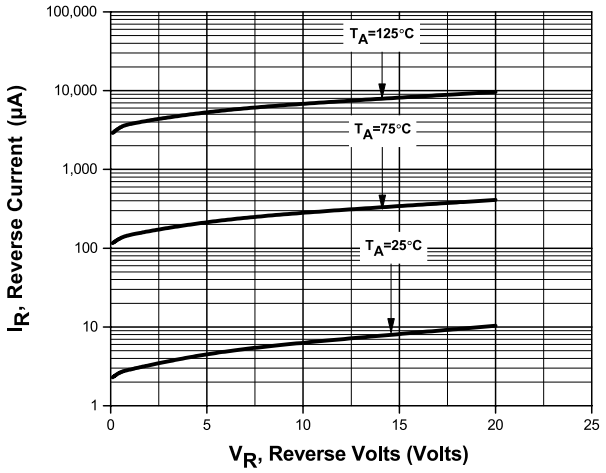
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CMSH5-20 CMSH5-60
CMSH5-40 CMSH5-100

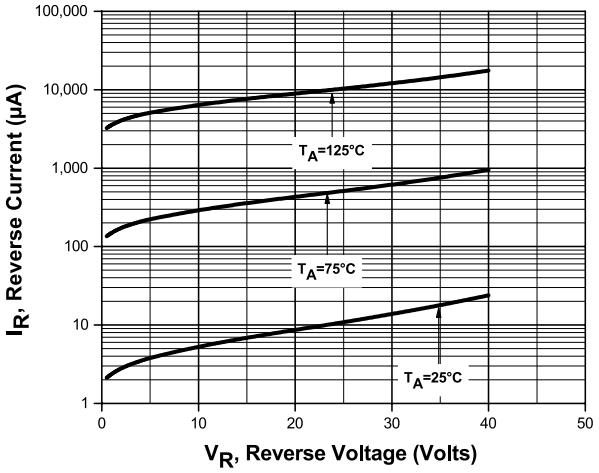
SURFACE MOUNT SILICON SCHOTTKY RECTIFIERS 5.0 AMP, 20 THRU 100 VOLT

TYPICAL ELECTRICAL CHARACTERISTICS

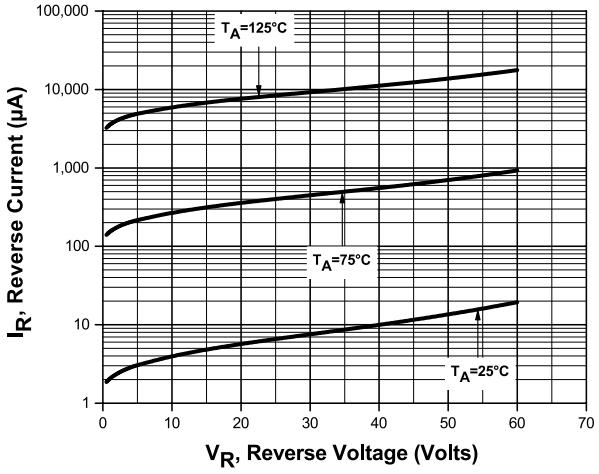
Leakage Current for CMSH5-20



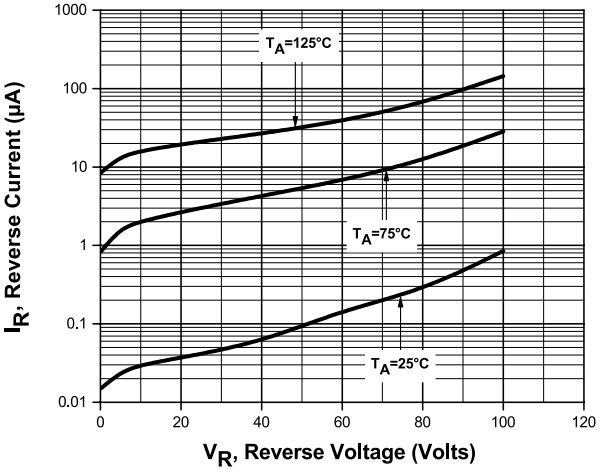
Leakage Current for CMSH5-40



Leakage Current for CMSH5-60



Leakage Current for CMSH5-100



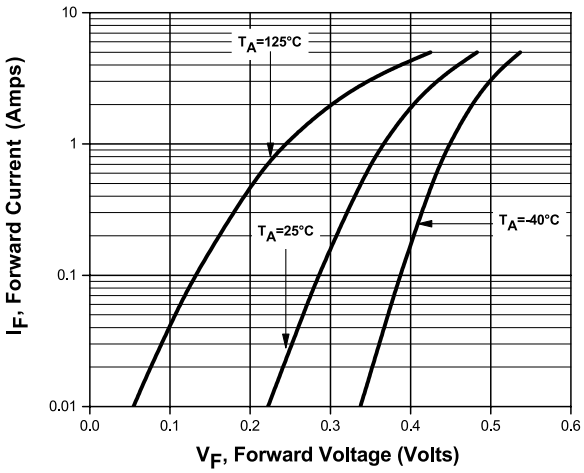
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CMSH5-20 CMSH5-60
CMSH5-40 CMSH5-100

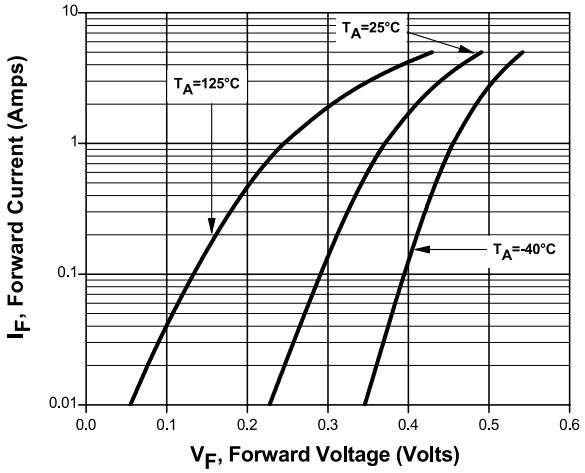
SURFACE MOUNT SILICON SCHOTTKY RECTIFIERS 5.0 AMP, 20 THRU 100 VOLT

TYPICAL ELECTRICAL CHARACTERISTICS

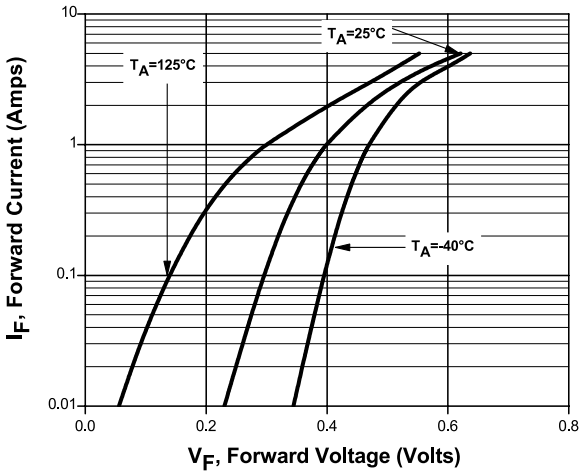
Forward Voltage for CMSH5-20



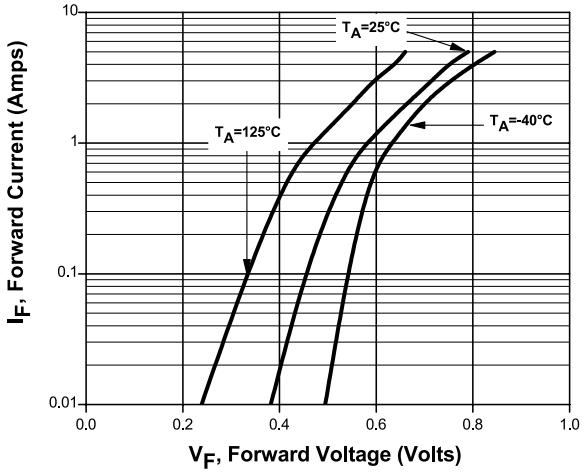
Forward Voltage for CMSH5-40



Forward Voltage for CMSH5-60



Forward Voltage for CMSH5-100



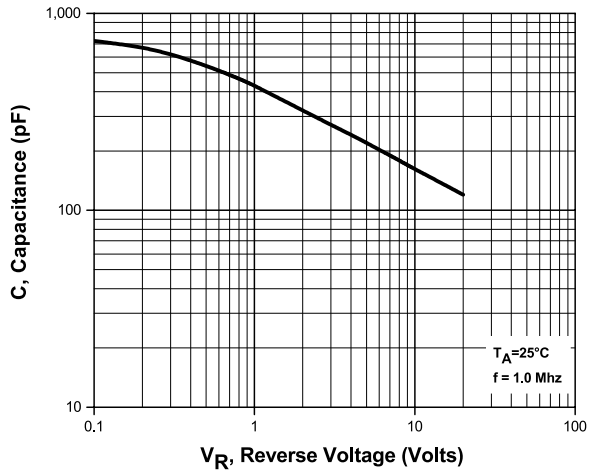
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CMSH5-20 CMSH5-60
CMSH5-40 CMSH5-100

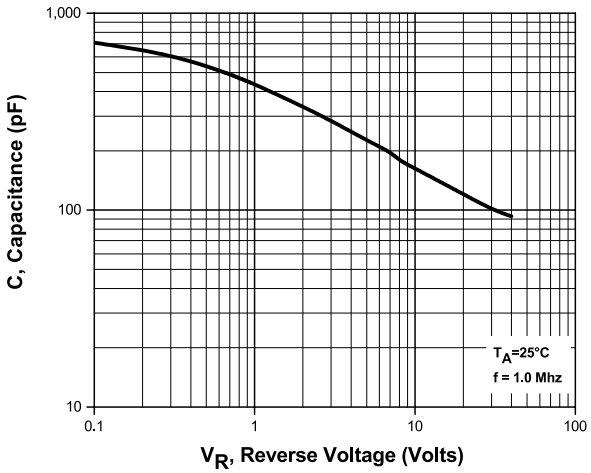
SURFACE MOUNT SILICON SCHOTTKY RECTIFIERS 5.0 AMP, 20 THRU 100 VOLT

TYPICAL ELECTRICAL CHARACTERISTICS

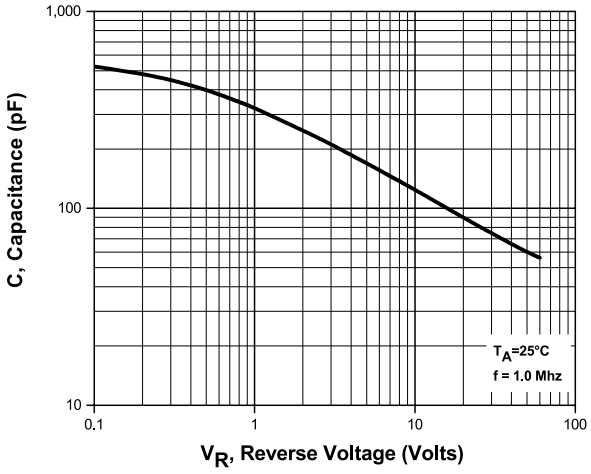
Capacitance for CMSH5-20



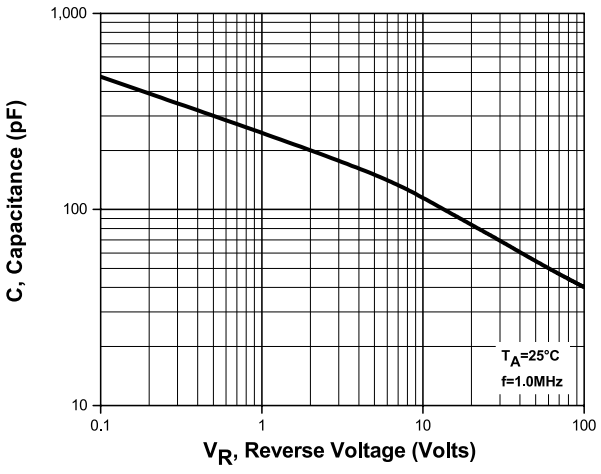
Capacitance for CMSH5-40



Capacitance for CMSH5-60



Capacitance for CMSH5-100

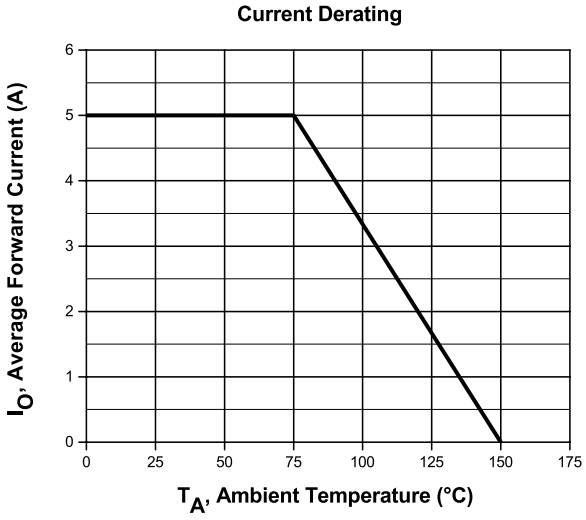


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CMSH5-20 CMSH5-60
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TYPICAL ELECTRICAL CHARACTERISTICS

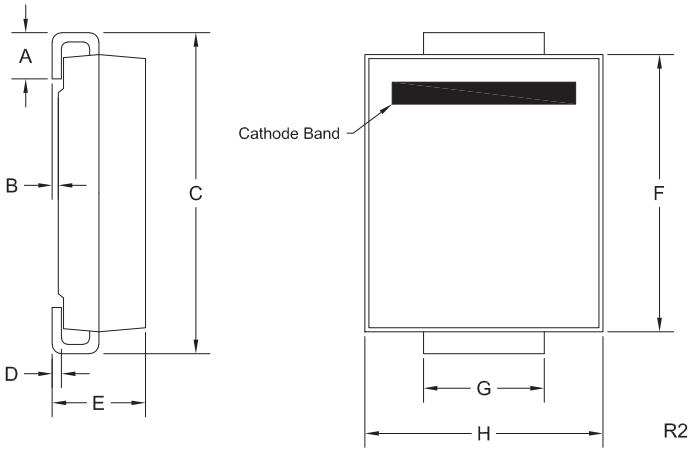


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Package Details
SMC Case



Mechanical Drawing



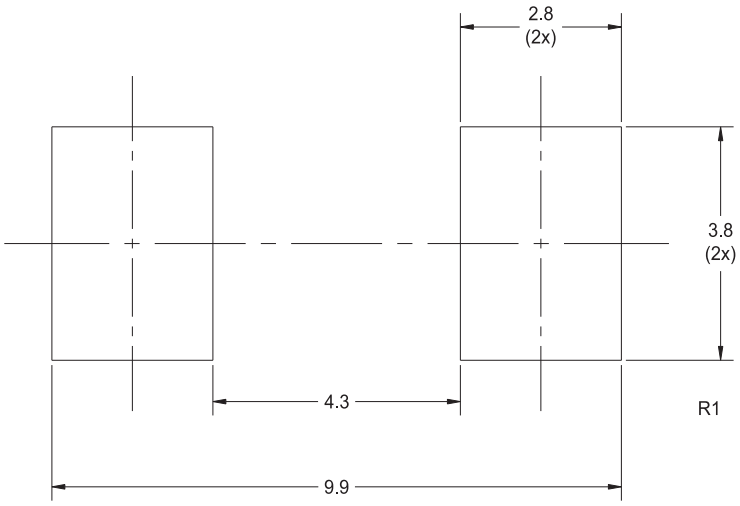
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.002	0.008	0.05	0.20
C	0.305	0.320	7.75	8.13
D	0.006	0.012	0.15	0.31
E	0.079	0.103	2.00	2.62
F	0.260	0.280	6.60	7.11
G	0.108	0.128	2.75	3.25
H	0.220	0.245	5.59	6.22

SMC (REV: R2)

Lead Code:
Reference individual device datasheet.

Part Marking: 3-6 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)



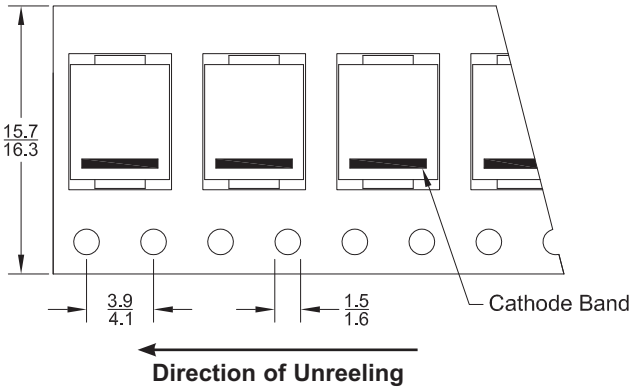
R4 (18-February 2021)

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Package Details
SMC Case

Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 16mm



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

Packaging Base

13” Reel = 3,000 pcs.

Reel Labeling Information

Each reel is labeled with the following information:
Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code and Ship Date.

Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13”	4	12,000	15x4x15	38x10x38	12	6
	11	33,000	15x15x9	38x38x23	30	14
	24	72,000	15x15x18	38x38x46	64	29

Ordering Information

- For devices taped and reeled on 13” reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

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Material Composition Specification

SMC Case



Device average mass . . . . . **232.5 mg**

Fluctuation margin . . . . . **+/-10%**

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	1.63%	3.8	Si	7440-21-3	1.63%	3.8	16,344
leadframe	copper	39.11%	90.92	Cu	7440-50-8	39.11%	90.92	391,054
die attach	high temperature solder paste	1.88%	4.36	Pb	7439-92-1	1.73%	4.033	17,346
				Sn	7440-31-5	0.09%	0.218	938
				Ag	7440-22-4	0.05%	0.109	469
encapsulation*	EMC	56.77%	132	silica	7631-86-9	38.61%	89.76	386,065
				epoxy resin	29690-82-2	11.35%	26.4	113,548
				phenol resin	9003-35-4	5.68%	13.2	56,774
				Sb_2O_3	1309-64-4	0.57%	1.32	5,677
				Br	7726-95-6	0.57%	1.32	5,677
	EMC GREEN	56.77%	132	silica (fused)	60676-86-0	43.72%	101.64	437,161
				epoxy resin	29690-82-2	5.68%	13.2	56,774
				phenol resin	9003-35-4	5.51%	12.804	55,071
				carbon black	1333-86-4	0.17%	0.396	1,703
				metal hydroxide	1309-42-8	1.7%	3.96	17,032
plating**	tin/lead process	0.61%	1.42	Sn	7440-31-5	0.49%	1.136	4,886
				Pb	7439-92-1	0.12%	0.284	1,222
	matte tin	0.61%	1.42	Sn	7440-31-5	0.61%	1.42	6,108

*EMC GREEN molding compound is Halogen-Free.

**For Lead Free plating, add suffix “PB FREE” to part number.
For Tin/Lead plating, add suffix “TIN/LEAD” to part number.
No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

Disclaimer

The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

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SMC Case



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