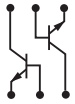
CMKT5089M10

SURFACE MOUNT
ULTRAmini™
DUAL NPN SILICON
MATCHED h_{FE} TRANSISTORS

ULTRAmini™



SOT-363 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMKT5089M10 consists of two (2) individual, isolated 5089 NPN silicon transistors with matched h_{FE}. This ULTRAmini™ device is manufactured by the epitaxial planar process and epoxy molded in an SOT-363 surface mount package. The CMKT5089M10 has been designed for applications requiring high gain and low noise.

MARKING CODE: C9M0

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	4.5	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=15V		50	nA
I_{EBO}	V_{EB}=4.5V		100	nA
BV_{CBO}	I_C=100μA	30		V
BV_{CEO}	I_C=1.0mA	25		V
BV_{EBO}	I_E=100μA	4.5		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.8	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	400	1200	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	450		
h_{FE}	V_{CE}=5.0V, I_C=10mA	400		
f_T	V_{CE}=5.0V, I_C=500μA, f=20MHz	50		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		10	pF
h_{fe}	V_{CE}=5.0V, I_C=1.0mA, f=1.0kHz	450	1800	
NF	V_{CE}=5.0V, I_C=100μA, R_S=10kΩ f=10Hz to 15.7kHz		2.0	dB

MATCHING CHARACTERISTICS:

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE1}/h_{FE2}*	V_{CE}=5.0V, I_C=1.0mA	0.9	1.0	
$\lvert V_{BEON1}-V_{BEON2}\rvert$	V_{CE}=5.0V, I_C=100μA		5.0	mV

* The lowest h_{FE} reading is taken as h_{FE1}.

R2 (7-August 2003)

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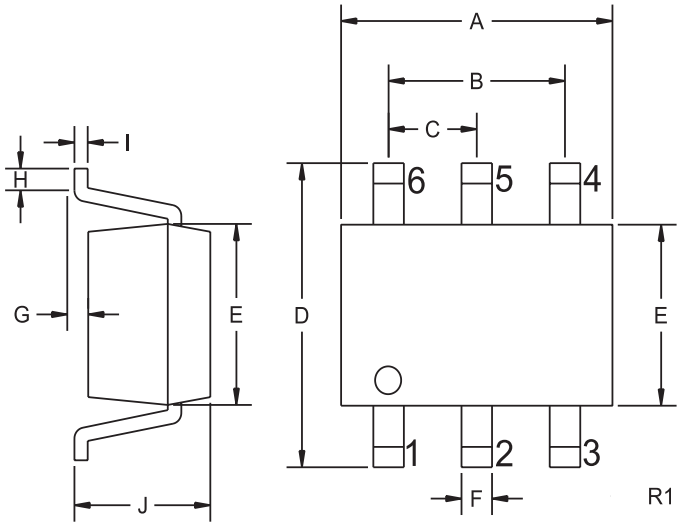
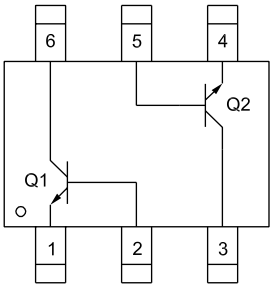
SOT-363 CASE - MECHANICAL OUTLINE





DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.073	0.085	1.85	2.15
B	0.051		1.30	
C	0.026		0.65	
D	0.075	0.091	1.90	2.30
E	0.043	0.055	1.10	1.40
F	0.006	0.012	0.15	0.30
G	0.000	0.004	0.00	0.10
H	0.010	-	0.25	-
I	0.004	0.010	0.10	0.25
J	0.031	0.039	0.80	1.00

SOT-363 (REV: R1)

LEAD CODE:
1) EMITTER Q1
2) BASE Q1
3) COLLECTOR Q2
4) EMITTER Q2
5) BASE Q2
6) COLLECTOR Q1

MARKING CODE: C9M0

R2 (7-August 2003)

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