CMST2222A

SUPERmini™
NPN SILICON TRANSISTOR

SUPERmini™

SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The Central Semiconductor CMST2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal, general purpose and switching applications.
MARKING CODE: 1PC

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Continuous Collector Current	I_C	600	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz

R2 (26-September 2002)

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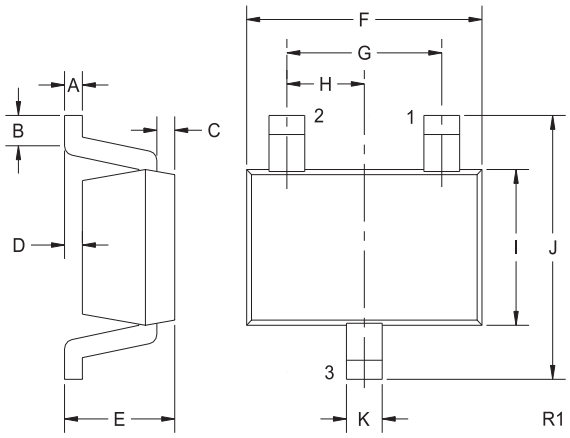
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100mA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

SOT-323 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.008	0.10	0.20
B	0.004	-	0.10	-
C	0.004	0.008	0.10	0.20
D	-	0.004	-	0.10
E	0.031	0.043	0.80	1.10
F	0.071	0.087	1.80	2.20
G	0.051		1.30	
H	0.026		0.65	
I	0.045	0.053	1.15	1.35
J	0.079	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R1)

LEAD CODE:
1) BASE
2) EMITTER
3) COLLECTOR

MARKING CODE: 1PC

R2 (26-September 2002)