CMPT2222AE

ENHANCED SPECIFICATION
NPN SILICON TRANSISTOR

SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The Central Semiconductor CMPT2222AE is an Enhanced version of the CMPT2222A NPN Switching transistor in a SOT-23 surface mount package, designed for switching applications, interface circuit and driver circuit applications. **Marking Code is C1PE**.

Enhanced Specifications:

- ♦ BV_{CBO} from 75V min to 100V min. (145V TYP)
- ♦ V_{CE} from 1.0V max to 0.5V max. (0.12V TYP)
- ♦ h_{FE} from 40 to 60 min. (130 TYP)

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
♦ **Collector-Base Voltage**	**V_{CBO}**	**100**	**V**
♦ **Collector-Emitter Voltage**	**V_{CEO}**	**45**	**V**
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	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: (T_A=25°C unless otherwise noted)

	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
	I_{CBO}	V_{CB}=60V			10	nA
	I_{CBO}	V_{CB}=60V, T_A=125°C			10	µA
	I_{CEV}	V_{CE}=60V, V_{EB}=3.0V			10	nA
	I_{EBO}	V_{EB}=3.0V			10	nA
♦	**BV_{CBO}**	**I_C=10µA**	**100**	**145**		**V**
♦	**BV_{CEO}**	**I_C=10mA**	**45**	**53**		**V**
	BV_{EBO}	I_E=10µA	6.0			V
♦	**$V_{CE(SAT)}$**	**I_C=150mA, I_B=15mA**		**0.92**	**0.15**	**V**
♦	**$V_{CE(SAT)}$**	**I_C=500mA, I_B=50mA**		**0.12**	**0.50**	**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**	**100**	**210**		
♦	**h_{FE}**	**V_{CE}=10V, I_C=1.0mA**	**100**	**205**		
♦	**h_{FE}**	**V_{CE}=10V, I_C=10mA**	**100**	**205**		
♦	**h_{FE}**	**V_{CE}=1.0V, I_C=150mA**	**75**	**150**		
	h_{FE}	V_{CE}=10V, I_C=150mA	100		300	
♦	**h_{FE}**	**V_{CE}=10V, I_C=500mA**	**60**	**130**		
	f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300			MHz

♦ Enhanced specification.

R0 (11-March 2002)

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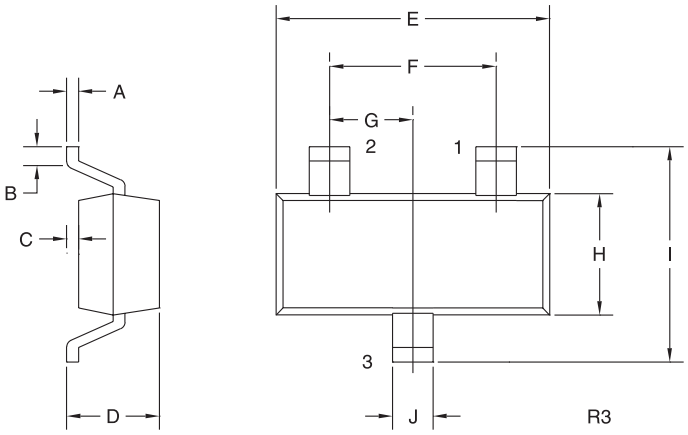
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz			8.0	pF
C_{ib}	V_{BE}=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=100μA, R_S =1.0KΩ, f=1.0kHz			4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5V, I_C=150mA, I_{B1}=15mA			10	ns
t_r	V_{CC}=30V, V_{BE}=0.5V, 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-23 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

LEAD CODE:
1) Base
2) Emitter
3) Collector

MARKING CODES: C1PE

R0 (11-March 2002)