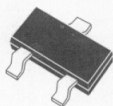


CMPT491E

ENHANCED SPECIFICATION

SURFACE MOUNT NPN SILICON TRANSISTOR



SOT-23 CASE

CentralTM Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT491E type is an Enhanced version of the industry standard 491 NPN silicon transistor. This device is manufactured by the epitaxial planar process and epoxy molded in an SOT-23 surface mount package. The CMPT491E features Low $V_{CE(SAT)}$, high h_{FE} , and has been designed for high current general purpose amplifier applications.

MARKING CODE: C49

COMPLEMENTARY TYPE: CMPT591E

FEATURED ENHANCED SPECIFICATIONS:

- ◆ $V_{CE(SAT)}$ @ 1.0A = 0.4V MAX (from 0.5V MAX)
- ◆ h_{FE} @ 500mA = 200 MIN (from 100 MIN)

MAXIMUM RATINGS: ($T_A=25^{\circ}C$)

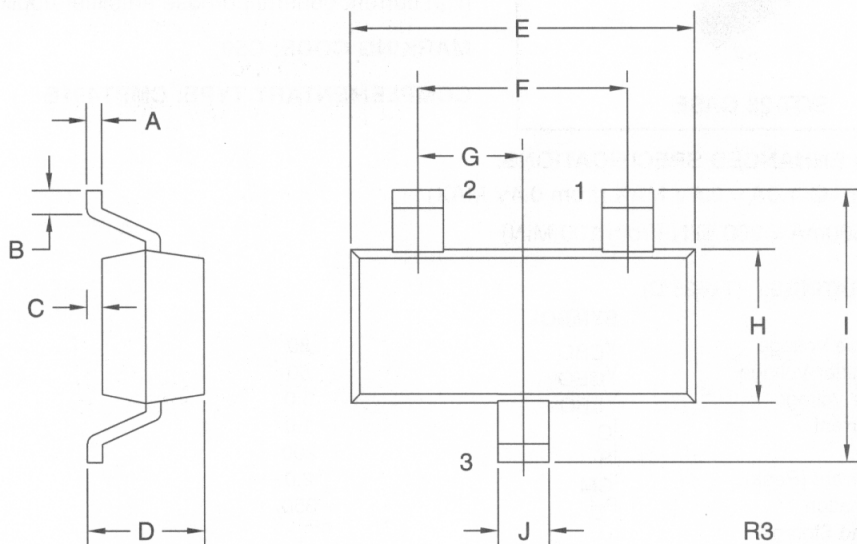
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Base Current	I_B	200	mA
Collector Current (Peak)	I_{CM}	2.0	A
Power Dissipation	P_D	350	mW
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +150	$^{\circ}C$
Thermal Resistance	θ_{JA}	357	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS: ($T_A=25^{\circ}C$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60V$		100	nA
I_{EBO}	$V_{EB}=4.0V$		100	nA
BV_{CBO}	$I_C=100\mu A$	80		V
BV_{CEO}	$I_C=10mA$	60		V
BV_{EBO}	$I_E=100\mu A$	5.0		V
◆ $V_{CE(SAT)}$	$I_C=500mA, I_B=50mA$		0.20	V
◆ $V_{CE(SAT)}$	$I_C=1.0A, I_B=100mA$		0.40	V
$V_{BE(SAT)}$	$I_C=1.0A, I_B=100mA$		1.1	V
$V_{BE(ON)}$	$V_{CE}=5.0V, I_C=1.0A$		1.0	V
◆ h_{FE}	$V_{CE}=5.0V, I_C=1.0mA$	200		
◆ h_{FE}	$V_{CE}=5.0V, I_C=500mA$	200	600	
h_{FE}	$V_{CE}=5.0V, I_C=1.0A$	50		
h_{FE}	$V_{CE}=5.0V, I_C=2.0A$	15		
f_T	$V_{CE}=10V, I_C=50mA, f=100MHz$	150		MHz
C_{ob}	$V_{CB}=10V, I_E=0, f=1.0MHz$		10	pF
◆ Enhanced specification.				

For Typical Electrical Characteristic Data for this device, please see Process CP305 on page 838.

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

MARKING CODE: C49

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	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)