

CMPT2907AE

**ENHANCED SPECIFICATION
SURFACE MOUNT
PNP SILICON TRANSISTOR**



SOT-23 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2907AE is an Enhanced version of the CMPT2907A PNP Switching transistor in a SOT-23 surface mount package, designed for switching applications, interface circuit and driver circuit applications.

MARKING CODE: C2FE

FEATURED ENHANCED SPECIFICATIONS:

- ◆ BV_{CBO} from 60V min to 90V min. (115V TYP)
- ◆ $V_{CE(SAT)}$ from 1.6V max to 0.7V max. (0.280V TYP)
- ◆ h_{FE} from 50 min to 75 min. (110 TYP)

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

- ◆ **Collector-Base Voltage**
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL		UNITS
V_{CBO}	90	V
V_{CEO}	60	V
V_{EBO}	5.0	V
I_C	600	mA
P_D	350	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	357	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=50\text{V}$			10	nA
I_{CBO}	$V_{CB}=50\text{V}, T_A=125^\circ\text{C}$			10	μA
I_{CEV}	$V_{CE}=30\text{V}, V_{EB}=0.5\text{V}$			50	nA
◆ BV_{CBO}	$I_C=10\mu\text{A}$	90	115		V
BV_{CEO}	$I_C=10\text{mA}$	60			V
BV_{EBO}	$I_E=10\mu\text{A}$	5.0			V
◆ $V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.103	0.2	V
◆ $V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.280	0.7	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$			1.3	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			2.6	V
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	100	205		
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	100			
h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	100			
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100		300	
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	75	110		
f_T	$V_{CE}=20\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	200			MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$			8.0	pF
C_{ib}	$V_{BE}=2.0\text{V}, I_C=0, f=1.0\text{MHz}$			30	pF

- ◆ Enhanced specification

R2 (1-February 2010)

CMPT2907AE

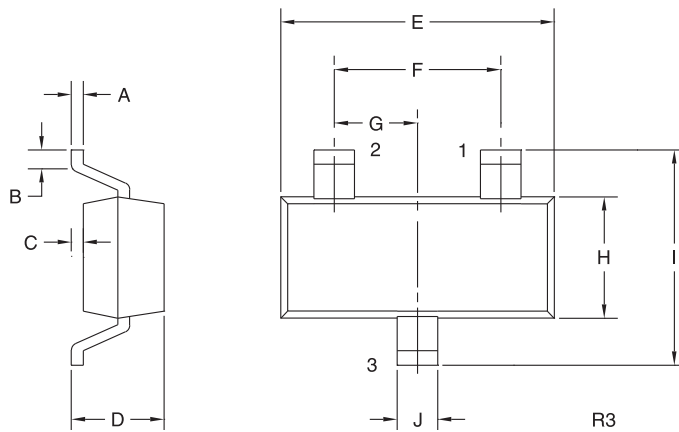
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MAX	UNITS
t_{on}	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	45	ns
t_d	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	10	ns
t_r	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	40	ns
t_{off}	$V_{CC}=6.0\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	100	ns
t_s	$V_{CC}=6.0\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	80	ns
t_f	$V_{CC}=6.0\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$	30	ns

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Base
- 2) Emitter
- 3) Collector

MARKING CODE: C2FE

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)

R2 (1-February 2010)

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PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
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DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

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- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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