



**CHENMKO ENTERPRISE CO.,LTD**

**CHBTA13PT**

**SURFACE MOUNT  
NPN Darlington Transistor**

VOLTAGE 30 Volts CURRENT 1.2 Ampere

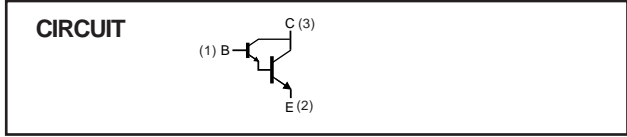
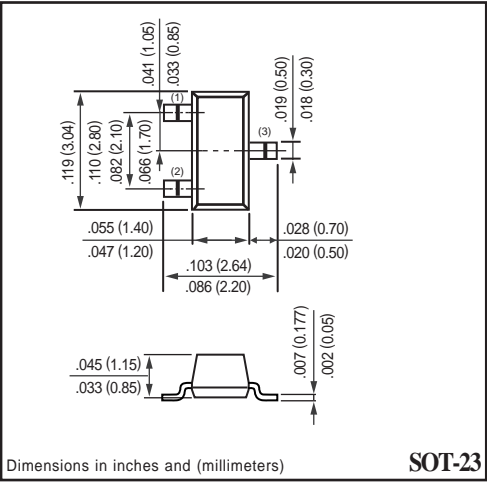
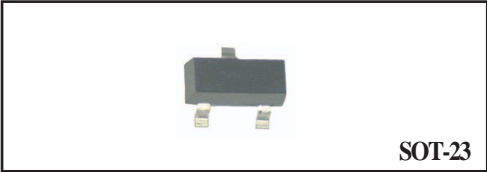
Lead free devices

**APPLICATION**  
\* High current gain applications.

**FEATURE**  
\* Small surface mounting type. (SOT-23)  
\* High current (Max.=1200mA).  
\* Suitable for high packing density.  
\* Low voltage (Max.=30V) .  
\* High saturation current and current gain capability.

**CONSTRUCTION**  
\* NPN Darlington Transistor

**MARKING**  
\* NI



**LIMITING VALUES**  
In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter	-	30	V
V <sub>CEO</sub>	collector-emitter voltage	open base	-	30	V
V <sub>EBO</sub>	emitter-base voltage	open collector	-	10	V
I <sub>C</sub>	collector current DC		-	1200	mA
I <sub>CM</sub>	peak collector current		-	1500	mA
I <sub>BM</sub>	peak base current		-	0.5	mA
P <sub>tot</sub>	total power dissipation derate above 25 °C	T <sub>amb</sub> ≤ 25 °C; note 1	-	350 2.8	mW mW/°C
T <sub>stg</sub>	storage temperature		-55	+150	°C
T <sub>j</sub>	junction temperature		-	+150	°C
T <sub>amb</sub>	operating ambient temperature		-55	+150	°C

**Note**  
1. Transistor mounted on an FR4 printed-circuit board, 1.6"X1.6"X0.06".

## RATING CHARACTERISTIC CURVES ( CHBTA13PT )

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	357	K/W

#### Note

1. Transistor mounted on an FR4 printed-circuit board, 1.6"X1.6"X0.06".

### CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = 30\text{ V}$	–	0.1	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{CE} = 10\text{ V}$	–	0.1	$\mu\text{A}$
$h_{FE}$	DC current gain	$V_{CE} = 5.0\text{ V}$ ; note 1 $I_C = 10\text{ mA}$ $I_C = 100\text{ mA}$	5000 10000	– –	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 0.1\text{ mA}$	–	1.50	V
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 100\text{ mA}; V_{CE} = 5.0\text{ V}$	–	2.0	V
$C_{cb}$	collector-base capacitance	$I_E = i_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	–	10	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}$ ; $f = 100\text{ MHz}$	125	–	MHz

#### Note

1. Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .