



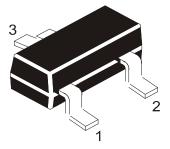
#### SOT-23 Formed SMD Package

BCW69 BCW70

## SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P transistors

**Marking** BCW69 = H1 BCW70 = H2



Pin configuration

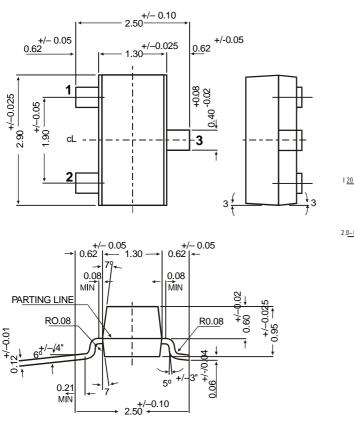
1 = BASE 2 = EMITTER 3 = COLLECTOR

#### ABSOLUTE MAXIMUM RATINGS

			BCW69		BCW70	
D.C. current gain at $T_i = 25$ °C		>	120		215	
$-I_C = 2 mA; -V_{CE} = 5 V$	h <sub>FE</sub>	<	260		500	
Collector-base voltage (open emitter)	$-V_{CB0}$	max		50	V	
Collector-emitter voltage (open base)	$-V_{CE0}$	max		45	V	
Collector current (peak value)	$-I_{CM}$	max		200	mA	
Total power dissipation up to $T_{amb} = 25 \ ^{\circ}C$	P <sub>tot</sub>	max		250	mW	
Junction temperature	$T_j$	max		150	° C	
Transition frequency at $f = 35$ MHz	U					
$-I_C = 10 \ mA; \ -V_{CE} = 5 \ V$	$f_T$	typ.		150	MHz	
Noise figure at $R_S = 2 k\Omega$						
$-I_C = 200 \ \mu A; \ -V_{CE} = 5 \ V;$						
$f = 1 \ kHz; B = 200 \ Hz$	F	<		10	dB	

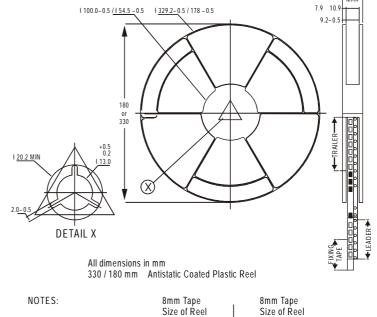
BCW69 BCW70

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	<b>RATINGS</b> (at $T_A = 25^{\circ}C$ unless otherwise specific	fied)					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5						
$ \begin{array}{c} \mbox{Collector-emitter voltage (open base)} \\ -I_C = 2 \ mA & -V_{CE0} \ max. 45 \ V \\ \mbox{Emitter-base voltage (open collector)} & -V_{EB0} \ max. 5 \ V \\ \mbox{Collector current (d.c)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (peak value)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (peak value)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (peak value)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (peak value)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (peak value)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (peak value)} & -I_C \ max. 200 \ mA \\ \mbox{Collector current (max. 100 \ mA \\ \mbox{Collector current (max. 100 \ mA \\ \mbox{Collector current (max. 150 \ °C \\ \mbox{THERMAL RESISTANCE \\ From junction to ambient \ \mbox{Rth j-a} = 500 \ KW \\ \mbox{CHARACTERISTICS \\ \mbox{T}_{I_{E} = 0; \ -V_{CB} = 20 \ V; \ T_{J} = 100 \ °C \\ \mbox{-} I_{CB0} \ < 100 \ mA \\ \mbox{I}_{E = 0; \ -V_{CE} = 5 \ V \\ \mbox{-} I_{CB0} \ < 10 \ \muA \\ \mbox{Base-emitter voltage } \\ \mbox{-} I_{C = 10 \ mA; \ -I_{B} = 0,5 \ mA \\ \mbox{-} V_{CEsat \ typ. 80 \ mV \\ \mbox{-} V_{BEsat \ typ. 720 \ mV \\ \mbox{-} V_{BEsat \ typ. 810 \ mV \\ \mbox{-} I_{S00}$							
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	-			$-V_{CES}$	max.	50	V
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				• •			<b>T</b> 7
	e						
$ \begin{array}{c} \mbox{Collector current (peak value)} & -I_{CM} & max. 200 mA \\ \mbox{Total power dissipation up to $T_{amb}$ = 25 °C } \\ \mbox{Storage temperature} & T_{stg} & -55 to +150 °C \\ \mbox{Junction temperature} & T_{j} & max. 150 °C \\ \mbox{THERMAL RESISTANCE} \\ \mbox{From junction to ambient} & $R_{th j-a}$ = 500 KW \\ \mbox{CHARACTERISTICS} \\ \mbox{T}_{i}$ = 25 °C unless otherwise specified \\ \mbox{Collector cut-off current} \\ \mbox{I}_{E}$ = 0; -V_{CB}$ = 20 V & -I_{CB0}$ < 100 nA \\ \mbox{I}_{E}$ = 0; -V_{CB}$ = 20 V; $T_{j}$ = 100 °C & -I_{CB0}$ < 100 nA \\ \mbox{I}_{E}$ = 0; -V_{CB}$ = 20 V; $T_{j}$ = 100 °C & -I_{CB0}$ < 100 nA \\ \mbox{I}_{E}$ = 0; -V_{CB}$ = 20 V; $T_{j}$ = 100 °C & -I_{CB0}$ < 100 nA \\ \mbox{I}_{E}$ = 0; -V_{CB}$ = 5 V & -V_{BE}$ & 600 to 750 mV \\ \mbox{Saturation voltages} & -I_{C}$ = 10 mA; -I_{B}$ = 0,5 mA & -V_{CEsat}$ typ. $80 mV \\ \mbox{<} $300 mV \\ \mbox{-} V_{BEsat}$ typ. $150 mV \\ \mbox{-} V_{EEsat}$ typ. $150 mV \\ \mbox{-} V_{EEsat}$ typ. $150 mV \\ \mbox{-} V_{BEsat}$ typ. $150 mV \\ \mbox{-} V_{EEsat}$ typ. $150 mV \\ \mbox{-} V_{EEsat}$ typ. $150 mV \\ \mbox{-} V_{EEsat}$ typ. $150 mV \\ \mbox{-} V_{EE}$ = 5 V \\ \mbox{-} T_{C}$ = 10 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 0; -V_{CB}$ = 10 V \\ \mbox{-} C_{C}$ typ. $4,5 pF \\ \mbox{-} Transition frequency at $f$ = 35 MHz \\ \mbox{-} I_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V_{CE}$ = 5 V \\ \mbox{-} T_{C}$ = 200 \muA; -V$							
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				-			
$\begin{array}{rcl} Storage temperature \\ Junction temperature \\ Junction temperature \\ T_{stg} & -55 \ to \ +150 \ ^{\circ}C \\ T_{j} & max. \ 150 \ ^{\circ}C \\ \hline T_{j} & max. \ 150 \ ^{\circ}C \\ \hline THERMAL RESISTANCE \\ From junction to ambient \\ R_{th \ j-a} & = \ 500 \ ^{\rm KW} \\ \hline CHARACTERISTICS \\ T_{i} & = 25 \ ^{\circ}C \ unless otherwise specified \\ Collector cut-off current \\ I_{E} & = 0; \ -V_{CB} & = 20 \ ^{\circ}V \\ I_{E} & = 0; \ -V_{CB} & = 20 \ ^{\circ}V \\ I_{E} & = 0; \ -V_{CB} & = 20 \ ^{\circ}V \\ I_{E} & = 0; \ -V_{CB} & = 20 \ ^{\circ}V \\ I_{E} & = 0; \ -V_{CB} & = 20 \ ^{\circ}V \\ I_{E} & = 0; \ -V_{CE} & = 5 \ ^{\circ}V \\ Saturation voltages \\ -I_{C} & = 10 \ ^{\circ}A; \ -I_{B} & = 0,5 \ ^{\circ}A \\ \hline \\ -I_{C} & = 50 \ ^{\circ}A; \ -I_{B} & = 2,5 \ ^{\circ}A \\ \hline \\ -I_{C} & = 50 \ ^{\circ}A; \ -I_{B} & = 2,5 \ ^{\circ}A \\ \hline \\ -I_{C} & = 10 \ ^{\circ}A; \ -I_{B} & = 2,5 \ ^{\circ}A \\ \hline \\ -I_{C} & = 10 \ ^{\circ}A; \ -V_{CE} & = 5 \ ^{\circ}V \\ \hline \\ -I_{C} & = 10 \ ^{\circ}A; \ -V_{CE} & = 5 \ ^{\circ}V \\ \hline \\ -I_{C} & = 10 \ ^{\circ}A; \ -V_{CE} & = 5 \ ^{\circ}V \\ \hline \\ -I_{C} & = 2 \ ^{\circ}A; \ -V_{CE} & = 5 \ ^{\circ}V \\ \hline \\ -I_{C} & = 2 \ ^{\circ}A; \ -V_{CE} & = 5 \ ^{\circ}V \\ \hline \\ \\ -I_{C} & = 0 \ ^{\circ}A; \ -V_{CE} & = 5 \ ^{\circ}V \\ \hline \\ \\ \\ \\ \\ Collector capacitance at \ f: 1 \ ^{\circ}MHz \\ I_{E} & I_{e} & = 0; \ -V_{CB} & = 10 \ ^{\circ}V \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	•						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
THERMAL RESISTANCE From junction to ambient $R_{th j-a} = 500 \text{ kW}$ CHARACTERISTICS $T_i = 25 ^{\circ}C$ unless otherwise specified Collector cut-off current $I_E = 0; -V_{CB} = 20 ^{\circ}V$ $-I_{CB0} < 100 ^{\circ}A$ $I_E = 0; -V_{CB} = 20 ^{\circ}V; T_j = 100 ^{\circ}C$ $-I_{CB0} < 100 ^{\circ}A$ Base-emitter voltage $-I_C = 2 ^{\circ}A; -V_{CE} = 5 ^{\circ}V$ $-V_{BE} ^{\circ}600 ^{\circ}to 750 ^{\circ}NV$ Saturation voltages $-I_C = 10 ^{\circ}A; -I_B = 0.5 ^{\circ}MA$ $-V_{CEsat} ^{\circ}V_{P}$ $R_{th} j-a = 500 ^{\circ}NA$ $-V_{CEsat} ^{\circ}V_{CB} = 10 ^{\circ}NV$ $-I_C = 50 ^{\circ}MA; -I_B = 2.5 ^{\circ}MA$ $-V_{CEsat} ^{\circ}V_{P}$ $R_{th} j-a = 0; -V_{CE} = 5 ^{\circ}NA$ $-V_{CEsat} ^{\circ}V_{P}$ $P_{th} = 10 ^{\circ}A; -V_{CE} = 5 ^{\circ}NA$ $-V_{CEsat} ^{\circ}V_{P}$ $P_{th} = 1e = 0; -V_{CE} = 5 ^{\circ}NA$ $V_{th} = 120 ^{\circ}S_{th}^{\circ}$ $P_{th} = 1e = 0; -V_{CB} = 10 ^{\circ}V$ $C_{c} ^{\circ}V_{P}$ $P_{th} = 1e = 0; -V_{CB} = 10 ^{\circ}V$ $C_{c} ^{\circ}V_{P}$ $P_{transition} frequency at f = 35 ^{\circ}MHz$ $P_{th} = 150 ^{\circ}NHz$ $-I_{C} : 10 ^{\circ}A; -V_{CE} = 5 ^{\circ}V$ $f_{T} ^{\circ}V_{P}$ $P_{transition} frequency at R_{s} = 2 ^{\circ}N_{s}P_{th} = 150 ^{\circ}NHz-I_{C} : 200 ^{\circ}A; -V_{CE} = 5 ^{\circ}VP_{t} ^{\circ}V_{th} = 150 ^{\circ}NHz-I_{C} : 200 ^{\circ}A; -V_{CE} = 5 ^{\circ}VP_{t} ^{\circ}V_{th} = 150 ^{\circ}NHz$				0			
From junction to ambient $R_{th j-a} = 500 \text{ KW}$ CHARACTERISTICS $T_j = 25 ^{\circ}C$ unless otherwise specifiedCollector cut-off current $I_E = 0; -V_{CB} = 20 ^{\circ}V; T_j = 100 ^{\circ}C$ $Base-emitter voltage-I_C = 2 ^{\circ}mA; -V_{CE} = 5 ^{\circ}V-I_C = 10 ^{\circ}mA; -I_B = 0.5 ^{\circ}mA-I_C = 50 ^{\circ}mA; -I_B = 2.5 ^{\circ}mA-I_C = 50 ^{\circ}mA; -I_B = 2.5 ^{\circ}mA-V_{CEsat} ^{\circ}typ. 80 ^{\circ}mV-I_C = 50 ^{\circ}mA; -I_B = 2.5 ^{\circ}mA-V_{CEsat} ^{\circ}typ. 810 ^{\circ}mV-I_C = 10 ^{\circ}mA; -I_B = 2.5 ^{\circ}mA-V_{CEsat} ^{\circ}typ. 810 ^{\circ}mV-I_C = 10 ^{\circ}mA; -V_{CE} = 5 ^{\circ}V-I_C = 2 ^{\circ}mA; -V_{CE} = 5 ^{\circ}Vh_{FE} ^{\circ}vV_{CE} = 10 ^{\circ}vV_{CE} = 5 ^{\circ}Vh_{FE} ^{\circ}vI_E = I_e = 0; -V_{CB} = 10 ^{\circ}VV_{CE} = 5 ^{\circ}VI_E = I_e = 0; -V_{CB} = 10 ^{\circ}VV_{CE} = 5 ^{\circ}VI_T ^{\circ}v_{CE} = 5 ^{\circ}VI_T ^{\circ}v_{DE} = 5 ^{\circ}VI_T ^{\circ}v_{DE} = 5 ^{\circ}VI_T ^{\circ}v_{DE} = 5 ^{\circ}VI_T ^{\circ}v_{CE} = 5 ^{\circ}VI_T ^{\circ}v_{CE} = 5 ^{\circ}VI_T ^{\circ}v_{CE} = 5 ^{\circ}VI_T ^{\circ}v_{DE} = 5 ^{\circ}V$	Junction temperature			$I_j$	max.	150	Ľ
CHARACTERISTICS $T_i = 25  ^{\circ}C$ unless otherwise specified $Collector cut-off currentI_E = 0; -V_{CB} = 20  V;  T_j = 100  ^{\circ}CBase-emitter voltage-I_C = 2  mA; -V_{CE} = 5  VSaturation voltages-I_C = 10  mA;  -I_B = 0.5  mA-I_C = 50  mA;  -I_B = 2.5  mA-I_C = 50  mA;  -I_B = 2.5  mA-I_C = 50  mA;  -I_B = 2.5  mA-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 2  mA;  -V_{CE} = 5  V-I_C = 2  mA;  -V_{CE} = 5  V-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 2  mA;  -V_{CE} = 5  V-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 2  mA;  -V_{CE} = 5  V-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 2  mA;  -V_{CE} = 5  V-I_C = 10  \muA;  -V_{CE} = 5  V-I_C = 200  \muA;  -V_{CE} = 5  V-I_C = 200  \muA;  -V_{CE} = 5  V-I_C = 200  \muA;  -V_{CE} = 5  V$	THERMAL RESISTANCE						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	From junction to ambient			R <sub>th j-a</sub>	=	500	KW
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	CHARACTERISTICS						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{split} & I_E = 0; -V_{CB} = 20 \ V; \ T_j = 100 \ ^{\circ}C & -I_{CB0} < 10 \ ^{\mu}A \\ & Base-emitter \ voltage \\ & -I_C = 2 \ mA; \ -V_{CE} = 5 \ V & -V_{BE} \ 600 \ to \ 750 \ mV \\ & Saturation \ voltages \\ & -I_C = 10 \ mA; \ -I_B = 0.5 \ mA & -V_{CEsat} \ typ. \ 80 \ mV \\ & < 300 \ mV \\ & -V_{BEsat} \ typ. \ 720 \ mV \\ & -V_{BEsat} \ typ. \ 720 \ mV \\ & -V_{BEsat} \ typ. \ 810 \ mV \\ & -V_{BEsat} \ typ. \ 150 \ mV \\ & -V_{BEsat} \ typ. \ typ. \ typ. \ typ. \ typ$				-ICB0	<	100	nA
Base-emitter voltage $-I_C = 2 mA; -V_{CE} = 5 V$ $-V_{BE}$ $600 \text{ to } 750 \text{ mV}$ Saturation voltages $-I_C = 10 \text{ mA}; -I_B = 0,5 \text{ mA}$ $-V_{EEsat}$ $typ.$ $80 \text{ mV}$ $< 300 \text{ mV}$ $-I_C = 50 \text{ mA}; -I_B = 2,5 \text{ mA}$ $-V_{CEsat}$ $typ.$ $720 \text{ mV}$ $-I_C = 50 \text{ mA}; -I_B = 2,5 \text{ mA}$ $-V_{CEsat}$ $typ.$ $150 \text{ mV}$ $-V_{BEsat}$ $-I_C = 50 \text{ mA}; -I_B = 2,5 \text{ mA}$ $-V_{CEsat}$ $typ.$ $150 \text{ mV}$ $-I_C = 10 \mu A; -V_{CE} = 5 V$ $h_{FE}$ $typ.$ $150 \text{ mV}$ $-I_C = 2 \text{ mA}; -V_{CE} = 5 V$ $h_{FE}$ $typ.$ $90$ $150$ $-I_C = 10 \mu A; -V_{CE} = 5 V$ $h_{FE}$ $typ.$ $215 \text{ mV}$ $h_{FE} < 260$ $500$ $500$ $500$ Collector capacitance at f: 1 MHz $I_E = I_e = 0; -V_{CB} = 10 V$ $C_c$ $typ.$ $4,5$ $pF$ Transition frequency at f = 35 MHz $-I_C : 10 \text{ mA}; -V_{CE} = 5 V$ $f_T$ $typ.$ $150 \text{ MHz}$ Noise figure at $R_S = 2 k\Omega$ $-I_C = 200 \mu A; -V_{CE} = 5 V$ $f_T$ $typ.$ $150 \text{ MHz}$					<	10	$\mu A$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				020			•
Saturation voltages $-I_C = 10 \text{ mA}; -I_B = 0.5 \text{ mA}$ $-V_{CEsat}$ typ. $80 \text{ mV}$ $-I_C = 10 \text{ mA}; -I_B = 2.5 \text{ mA}$ $-V_{CEsat}$ typ. $720 \text{ mV}$ $-I_C = 50 \text{ mA}; -I_B = 2.5 \text{ mA}$ $-V_{CEsat}$ typ. $150 \text{ mV}$ $-I_C = 50 \text{ mA}; -I_B = 2.5 \text{ mA}$ $-V_{CEsat}$ typ. $150 \text{ mV}$ $-I_C = 50 \text{ mA}; -I_B = 2.5 \text{ mA}$ $-V_{CEsat}$ typ. $810 \text{ mV}$ $D.C.$ current gain $-V_{CEsat}$ typ. $810 \text{ mV}$ $-I_C = 10 \text{ µA}; -V_{CE} = 5 \text{ V}$ $h_{FE}$ $yp.$ $90$ $-I_C = 2 \text{ mA}; -V_{CE} = 5 \text{ V}$ $h_{FE}$ $260$ $500$ Collector capacitance at f: 1 MHz $I_E = I_e = 0; -V_{CB} = 10 \text{ V}$ $C_c$ typ. $4.5 \text{ pF}$ Transition frequency at f = 35 MHz $-I_C : 10 \text{ mA}; -V_{CE} = 5 \text{ V}$ $f_T$ typ. $150 \text{ MHz}$ Noise figure at $R_S = 2 \text{ k}\Omega$ $-I_C = 200 \text{ µA}; -V_{CE} = 5 \text{ V}$ $f_T$ typ. $150 \text{ MHz}$	0			$-V_{BE}$	600 to	750	mV
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				22			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$-I_C = 10 \ mA; \ -l_B = 0.5 \ mA$			-V <sub>CEsat</sub>	typ.	80	mV
$\begin{array}{cccccccccccccccccccccccccccccccccccc$						300	mV
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				-V <sub>BEsat</sub>	typ.	720	mV
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$L_{2} = 50 \text{ mA}; \ l_{2} = 25 \text{ mA}$			Van	tun	150	mV
D.C. current gain       BCW69       BCW70 $-I_C = 10 \ \mu A; \ -V_{CE} = 5 \ V$ $h_{FE}$ typ. $90$ 150 $-I_C = 2 \ mA; \ -V_{CE} = 5 \ V$ $>$ $120$ $215$ $h_{FE}$ $<$ $260$ $500$ Collector capacitance at f: 1 MHz $I_E = I_e = 0; \ -V_{CB} = 10 \ V$ $C_c$ typ. $4.5 \ pF$ Transition frequency at f = 35 MHz $-I_C: 10 \ mA; \ -V_{CE} = 5 \ V$ $f_T$ typ.       150 \ MHz         Noise figure at $R_S = 2 \ k\Omega$ $-I_C = 200 \ \mu A; \ -V_{CE} = 5 \ V$ $F_T$ typ.       150 \ MHz	-1C = 50  mA, -1B = 2.5  mA						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				- v BEsat	typ.	010	ШV
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	0			BCW69	B		0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$-I_C = 10 \ \mu A; \ -V_{CE} = 5 \ V$	h <sub>FE</sub>	typ	. 90		150	
Collector capacitance at f: 1 MHz $I_{L}$ $I_{L}$ $l_E = I_e = 0; -V_{CB} = 10 V$ $C_c$ $typ.$ $4,5$ $P Transition frequency at f = 35 MHz-I_C: 10 mA; -V_{CE} = 5 Vf_Ttyp.150Noise figure at R_S = 2 k\Omega-I_C = 200 \ \mu A; -V_{CE} = 5 VV$	$-I_C = 2 mA; -V_{CE} = 5 V$		>	120		215	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		h <sub>FE</sub>	<	260		500	
Transition frequency at $f = 35$ MHz $-I_C$ : 10 mA; $-V_{CE} = 5$ V $f_T$ typ.150 MHzNoise figure at $R_S = 2$ k $\Omega$ $-I_C = 200 \ \mu$ A; $-V_{CE} = 5$ V	Collector capacitance at f: 1 MHz						
$-I_{C:} 10 \text{ mA}; -V_{CE} = 5 \text{ V} \qquad f_T \text{ typ.} \qquad 150 \text{ MHz}$ Noise figure at $R_S = 2 \text{ k}\Omega$ $-I_C = 200 \mu\text{A}; -V_{CE} = 5 \text{ V}$		$C_c$	typ		4,5		рF
Noise figure at $R_S = 2 k\Omega$ - $I_C = 200 \mu A; -V_{CE} = 5 V$	Transition frequency at $f = 35$ MHz						
$-I_C = 200 \ \mu A; \ -V_{CE} = 5 \ V$	$-I_{C:}$ 10 mA; $-V_{CE}$ = 5 V	$f_T$	typ		150		MHz
$f = 1 \ kHz; B = 200 \ Hz$ $F < 10 \ dB$							
	$f = 1 \ kHz; B = 200 \ Hz$	F	<		10		dB



### SOT-23 Formed SMD Package

# **SOT-23 Package Reel Information** Reel specifications for Packing (13"/7" reels) MAX



The bandolier of 330 mm reel contains at least 10,000 devices. 1.

No. of Devices

- 2. The bandolier of 180 mm reel contains at least 3,000 devices.
- No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel. 3. 15 empty compartments for 180 mm reel.

Size of Reel

180 mm (7")

3.000 Pcs

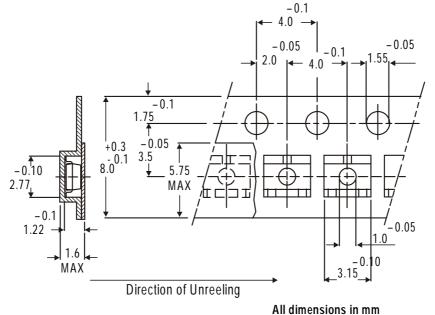
4. Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.

330 mm (13")

10.000 Pcs

5. The carrier tape (leader) starts with at least 75 empty positions (equivalent to 330 mm). In order to fix the carrier tape a self adhesive tape of 20 to 50 mm is applied. At the end of the bandolier at least 40 empty positions (equivalent to 160 mm) are there.

## **Tape Specification for SOT-23 Surface Mount Device**



Continental Device India Limited

# Packing Detail

PACKAGE	STANDA	ARD PACK	INNER CARTON BOX		OUTER CARTON BOX			
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt	
SOT-23 T&R	3K/reel	136 gm/3K pcs	3" x 7.5" x 7.5" 9" x 9" x 9"	12.0K 51.0K	17" x 15" x 13.5" 19" x 19" x 19"	192.0K 408.0K	12 kgs 28 kgs	
	10K/reel	415 gm/10K pcs	13" x 13" x 0.5"	10.0K	17" x 15" x 13.5"	300.0K	16 kgs	

## **Customer Notes**

### **Component Disposal Instructions**

- 1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
- 2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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