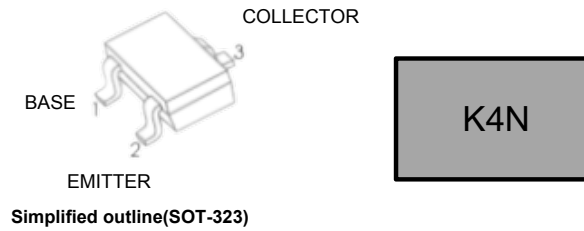




## FEATURES

Complementary to MMBT5401W

Ideal for medium power amplification and switching



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

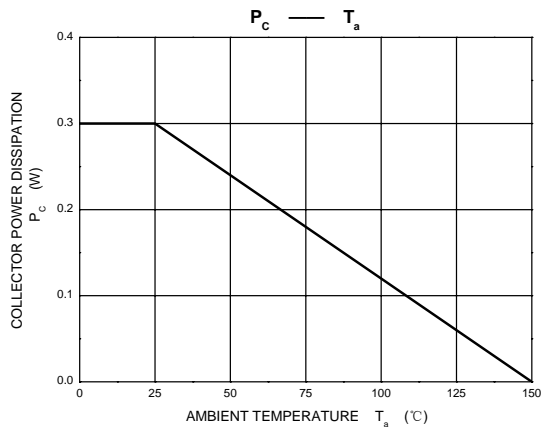
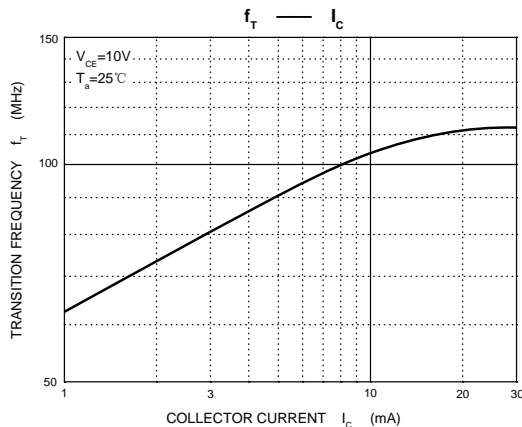
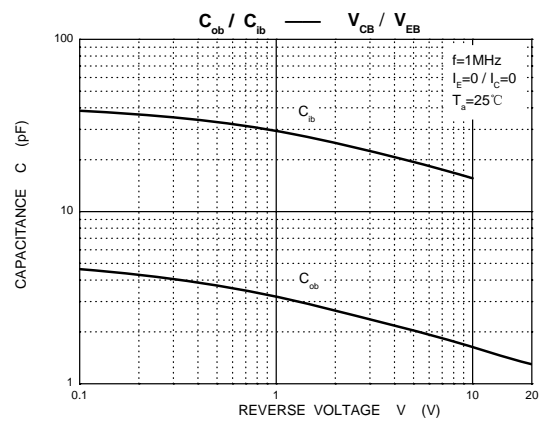
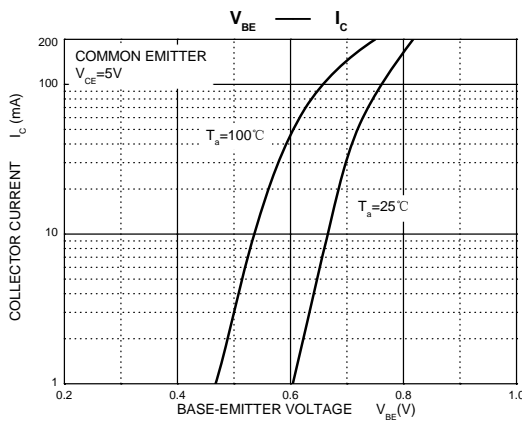
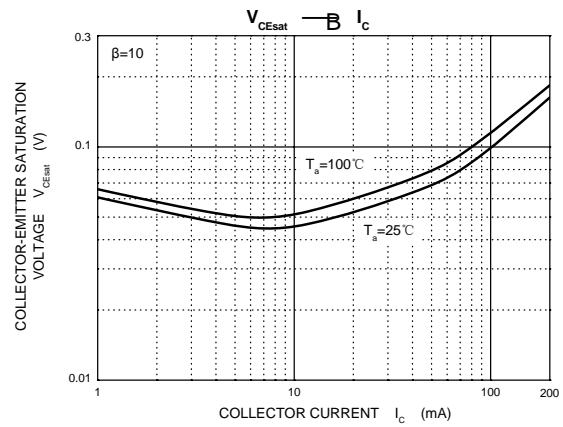
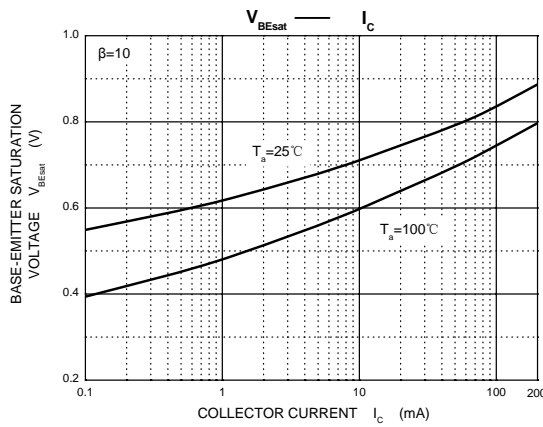
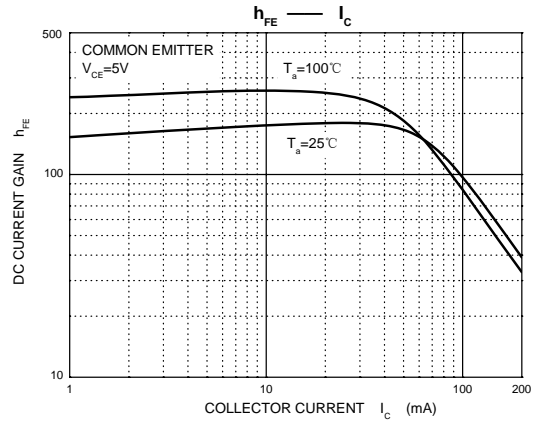
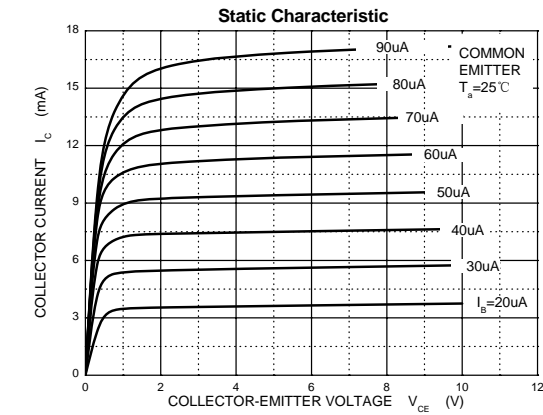
Maximum ratings ( T =25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	180	V
V <sub>CE0</sub>	Collector-Emitter Voltage	160	V
V <sub>EB0</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	0.6	A
P <sub>C</sub>	Collector Power Dissipation	300	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

## Electrical Characteristics

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=1mA, I_B=0$	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=120V, I_E=0$			50	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			50	nA
DC current gain	$h_{FE1}^*$	$V_{CE}=5V, I_C=1mA$	80			
	$h_{FE2}^*$	$V_{CE}=5V, I_C=10mA$	100		300	
	$h_{FE3}^*$	$V_{CE}=5V, I_C=50mA$	50			
Collector-emitter saturation voltage	$V_{CEsat}^*$	$I_C=10mA, I_B=1mA$			0.15	V
		$I_C=50mA, I_B=5mA$			0.2	
Base-emitter saturation voltage	$V_{BEsat}^*$	$I_C=10mA, I_B=1mA$			1	V
		$I_C=50mA, I_B=5mA$			1	
Transition frequency	$f_T$	$V_{CE}=10V, I_C=10mA, f=100MHz$	100		300	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$			6	pF
Input capacitance	$C_{ib}$	$V_{BE}=0.5V, I_C=0, f=1MHz$			20	pF
Noise figure	NF	$V_{CE}=5V, I_C=0.25mA,$ $f=10Hz$ to $15.7KHz, R_s=1k\Omega$			8	dB

RATING AND CHARACTERISTIC CURVES



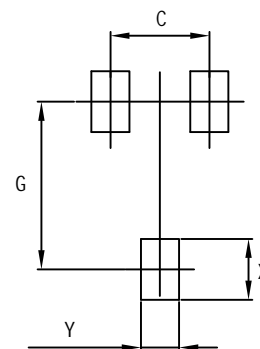
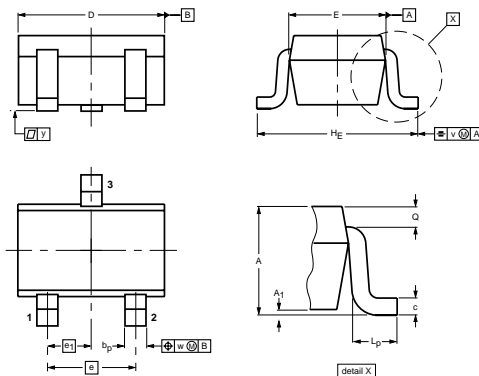
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150 °C
	-Temperature Max( $T_{s(max)}$ )	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3 °C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217 °C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260 °C



Package Dimensions & Suggested Pad Layout

SOT-323

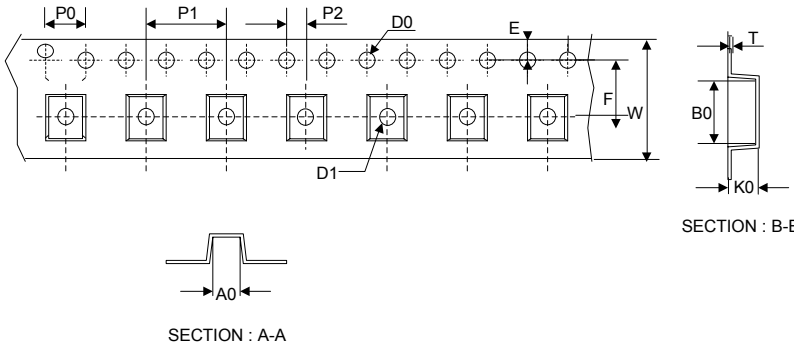
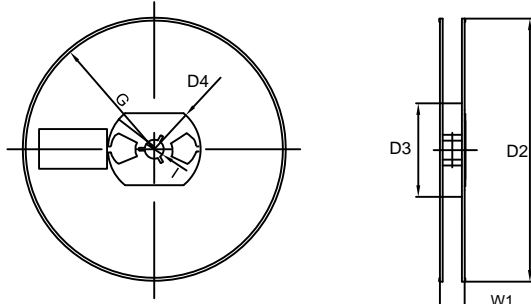


Dimensions	Value (in mm)
C	1.30
G	2.00
X	0.90
Y	0.65

DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

Tape & reel specification

Tape	Symbol	Dimension (mm)
	P0	4.00±0.20
	P1	4.00±0.20
	P2	2.00±0.20
	D0	1.55±0.20
	D1	1.00±0.20
	E	1.55±0.25
	F	3.60±0.20
	W	8.00±0.20
	A0	2.50±0.20
	B0	2.60±0.20
K0	1.40±0.20	
T	0.20±0.20	
7" Reel	D2	177.0±5.0
	D3	55Min.
	D4	R24.6±2.0
	G	R82.0±2.0
	I	13.0±2.0
	W1	10.20±3.0
	Quantity: 3000PCS	