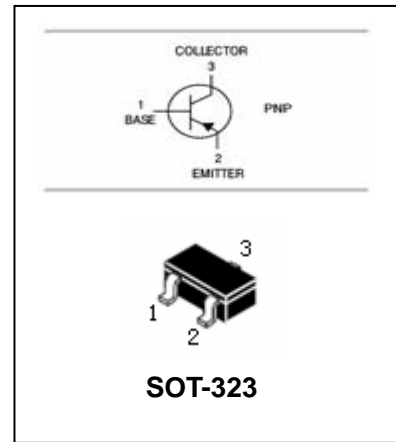


# PNP Silicon Epitaxial Planar Transistor

# MMST4403

## FEATURES

- Complementary NPN type available (MMST4401).
- Epitaxial planar die construction.
- Also available in lead free version.



## APPLICATIONS

- General purpose application and switching application.

## ORDERING INFORMATION

Type No.	Marking	Package Code
MMST4403	K3T	SOT-323

## MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	-40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-40	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-600	mA
P <sub>C</sub>	Collector Dissipation	200	mW
R <sub>θJA</sub>	Thermal resistance ,Junction to ambient	625	°C/W
T <sub>j</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-55 to +150	°C



## PNP Silicon Epitaxial Planar Transistor

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## ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu A, I_E=0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1mA, I_B=0$	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu A, I_C=0$	-5			V
Collector cut-off current	$I_{CEX}$	$V_{CE}=-35V, V_{EB(OFF)}=-0.4V$			-0.1	$\mu A$
Base cut-off current	$I_{BL}$	$V_{CE}=-35V, V_{EB(OFF)}=-0.4V$			-0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=-1V, I_C=-0.1mA$ $V_{CE}=-1V, I_C=-1.0mA$ $V_{CE}=-1V, I_C=-10mA$ $V_{CE}=-2V, I_C=-150mA$ $V_{CE}=-2V, I_C=500mA$	30 60 100 100 20		300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-150mA, I_B=-15mA$ $I_C=-500mA, I_B=-50mA$			-0.4 -0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-150mA, I_B=-15mA$ $I_C=-500mA, I_B=-50mA$			-0.95 -1.3	V
Transition frequency	$f_T$	$V_{CE}=-10V, I_C=-1.0mA,$ $f=1.0kHz$	200			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0, f=1MHz$			8.5	pF
Delay time	$t_d$	$V_{CC}=-30V, V_{BE(off)}=-2V,$ $I_C=-150mA, I_{B1}=-15mA$			15	nS
Rise time	$t_r$				20	nS
Storage time	$t_s$	$V_{CC}=-30V, I_C=-150mA,$ $I_{B1}=I_{B2}=-15mA$			225	nS
Fall time	$t_f$				30	nS

## PNP Silicon Epitaxial Planar Transistor

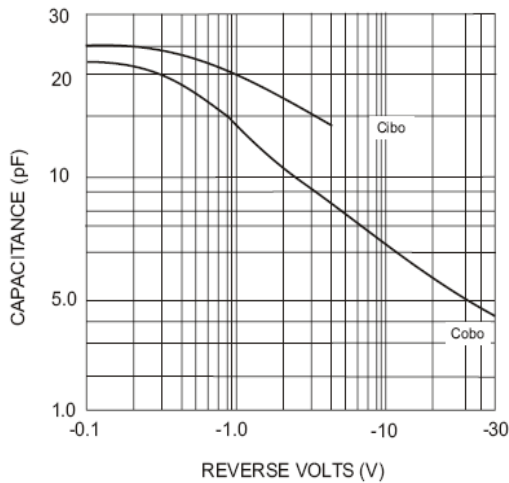
**MMST4403**
**TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified**


Fig. 1 Typical Capacitance

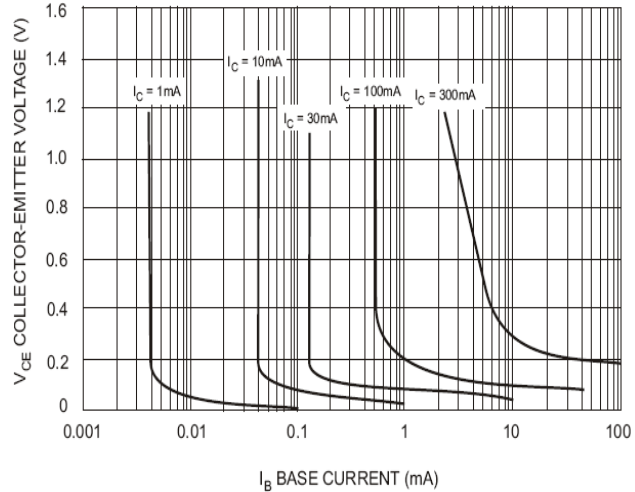


Fig. 2 Typical Collector Saturation Region

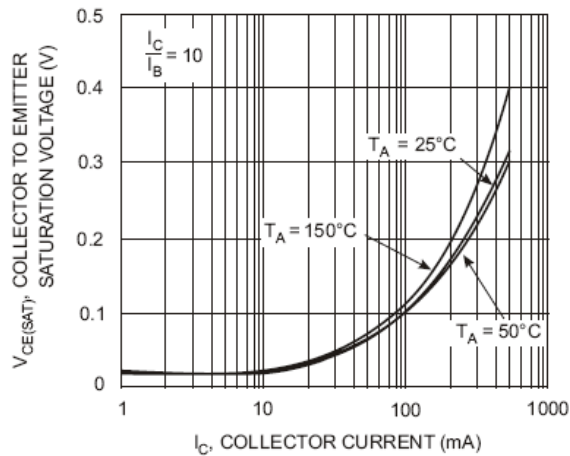


Fig. 3 Collector Emitter Saturation Voltage vs. Collector Current

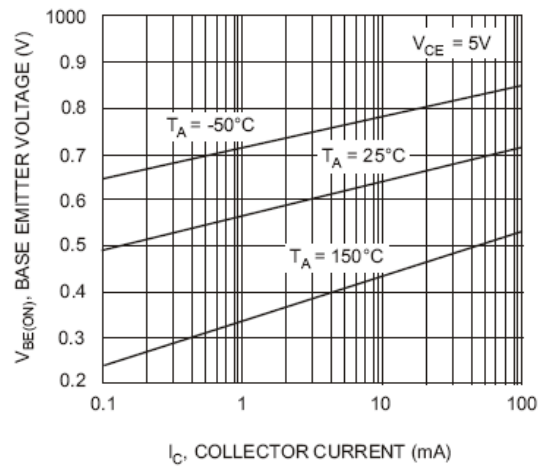


Fig. 4 Base-Emitter Voltage vs. Collector Current

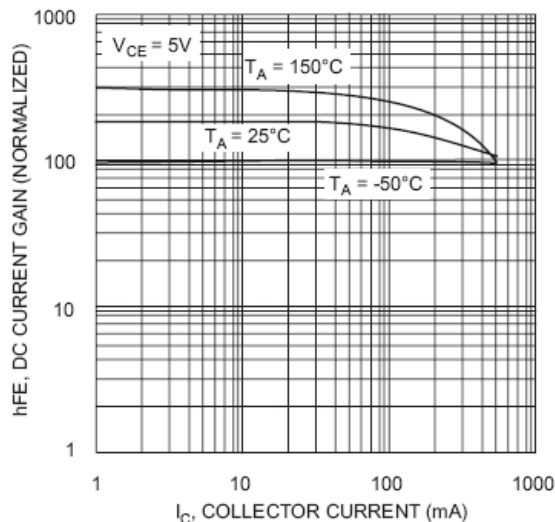


Fig. 5 DC Current Gain vs. Collector Current

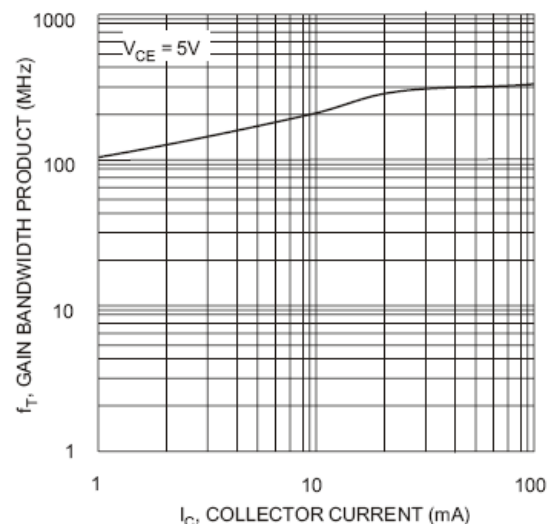


Fig. 6 Gain Bandwidth Product vs. Collector Current

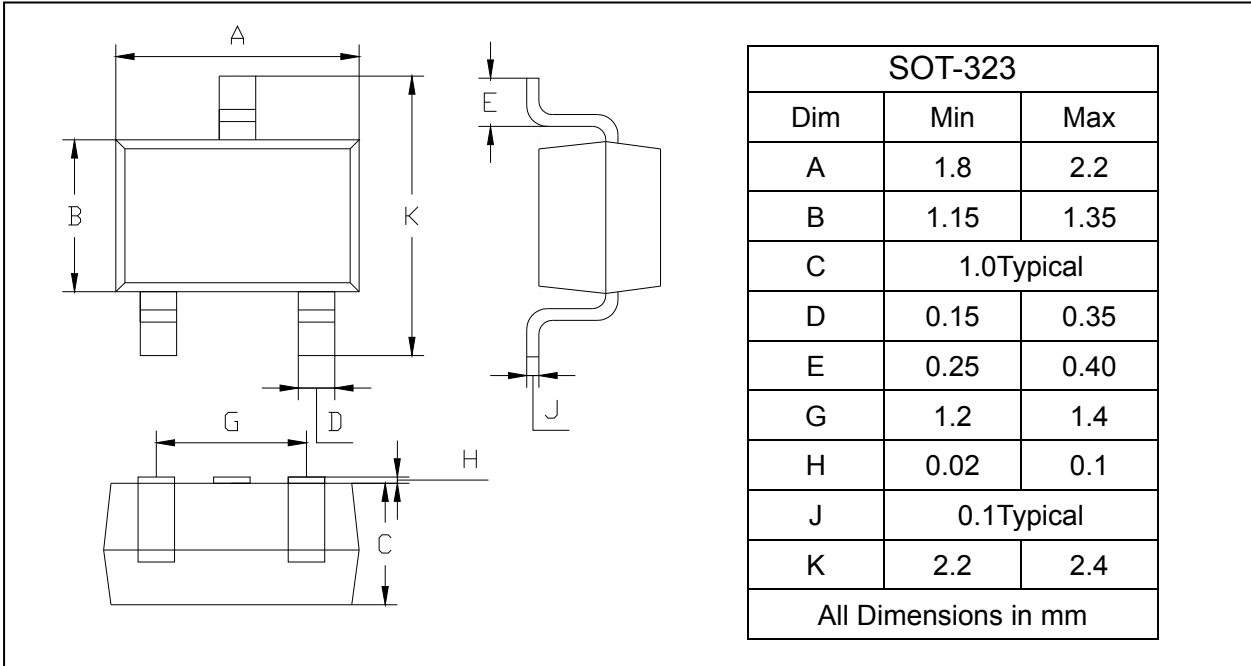
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# MMST4403

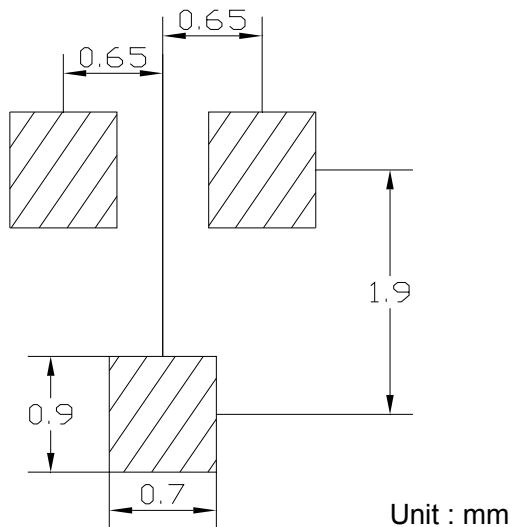
## PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



## SOLDERING FOOTPRINT



## PACKAGE INFORMATION

Device	Package	Shipping
MMST4403	SOT-323	3000/Tape&Reel