



PNP Silicon Epitaxial Planar Transistor

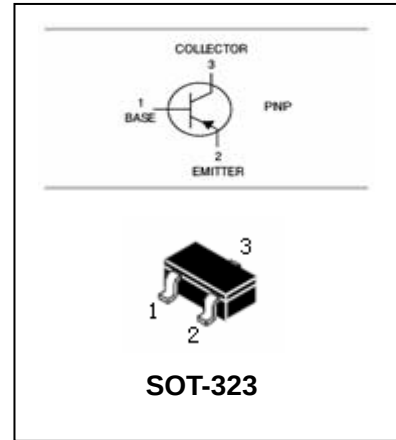
MMST4403

FEATURES

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



Lead-free



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_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-600	mA
P_C	Collector Dissipation	200	mW
$R_{\theta JA}$	Thermal resistance ,Junction to ambient	625	°C/W
T_j, T_{stg}	Junction and Storage Temperature	-55 to +150	°C



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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	μA
Base cut-off current	I_{BL}	$V_{CE} = -35V, V_{EB(OFF)} = -0.4V$			-0.1	μA
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				225	nS
Fall time	t_f				30	nS

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

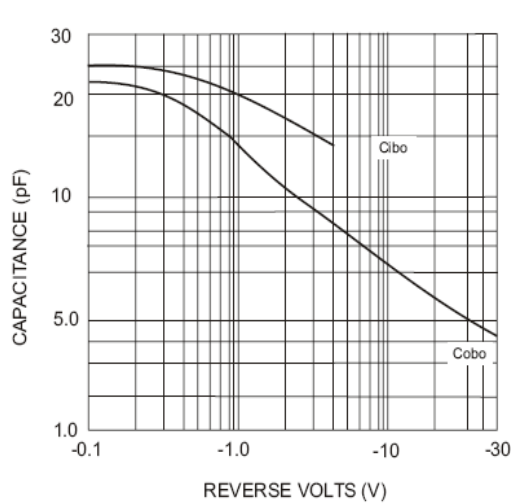


Fig. 1 Typical Capacitance

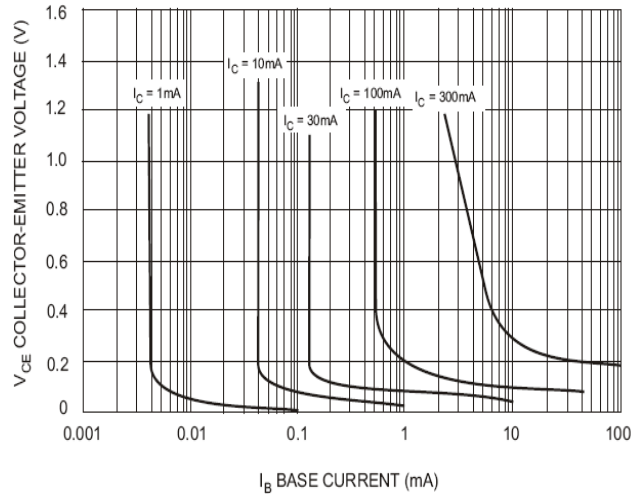


Fig. 2 Typical Collector Saturation Region

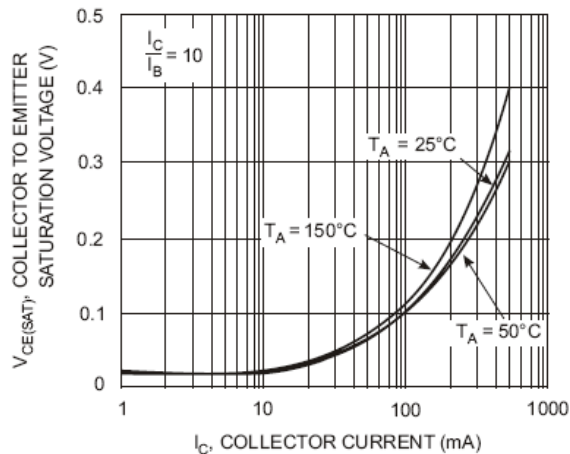


Fig. 3 Collector Emitter Saturation Voltage vs. Collector Current

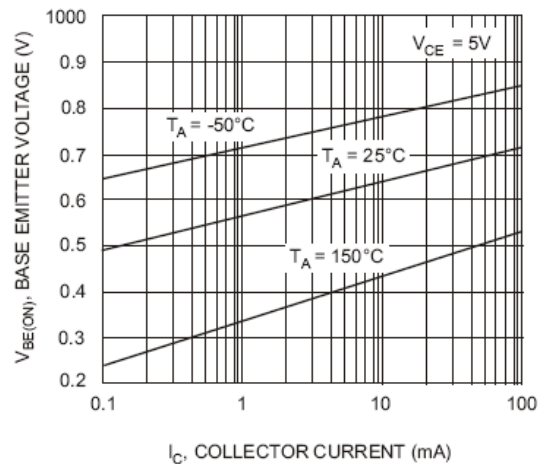


Fig. 4 Base-Emitter Voltage vs. Collector Current

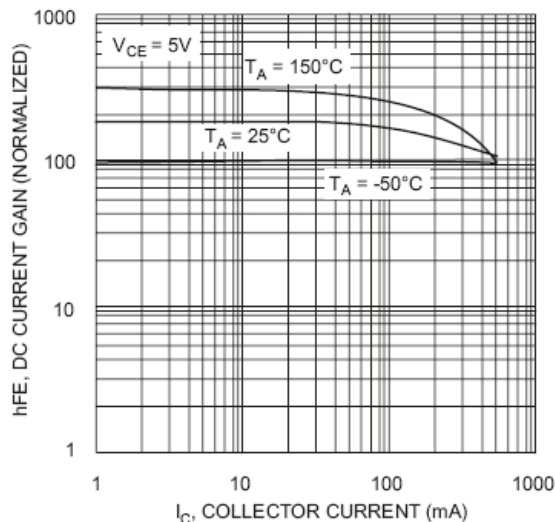


Fig. 5 DC Current Gain vs. Collector Current

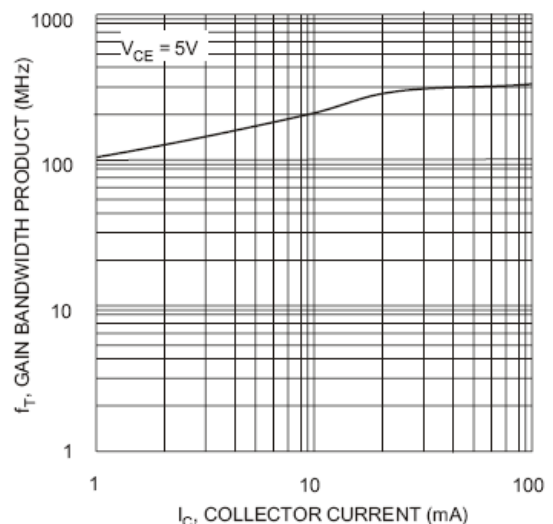


Fig. 6 Gain Bandwidth Product vs. Collector Current

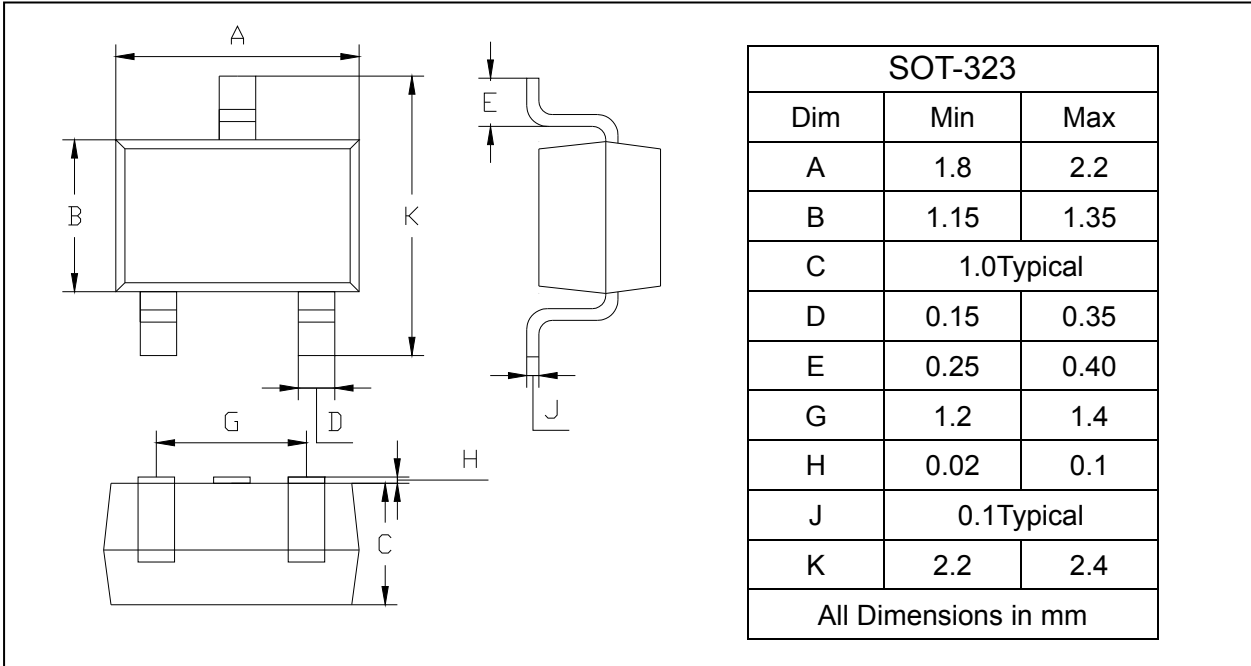
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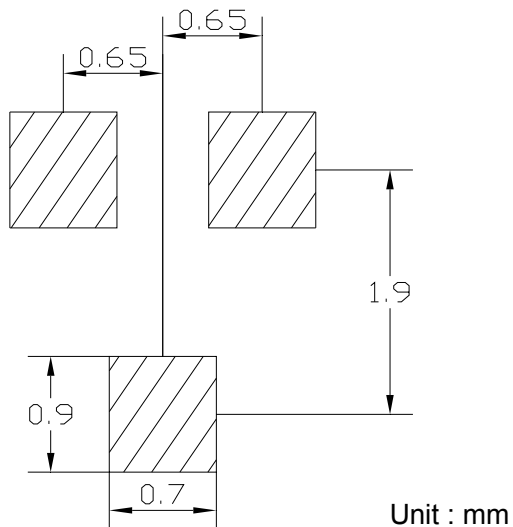
PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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