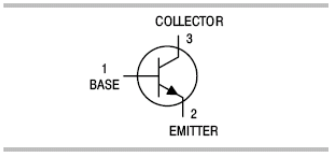
MMST3904

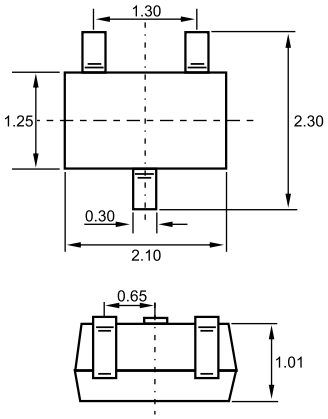
NPN Silicon Epitaxial Planar Transistor

RoHS COMPLIANT



Lead-free

SOT-323



Dimensions in inches and (millimeters)

Features

- Power dissipation.(P_C=0.2W)

Applications

- Audio frequency general purpose amplifier.

Ordering Information

Type No.	Marking	Package Code
MMST3904	K2N	SOT-323

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	200	mA
P_C	Collector Dissipation	200	mW
T_j,T_{stg}	Junction and Storage Temperature	-55~150	℃

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ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	60		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=10μA,I_C=0	5		V
Collector cut-off current	I_{CBO}	V_{CB}=60V,I_E=0		0.05	μA
Collector cut-off current	I_{CEO}	V_{CE}=40V,I_B=0		0.5	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0		0.05	μA
DC current gain	h_{FE}	V_{CE}=1V,I_C=0.1mA V_{CE}=1V,I_C=1mA V_{CE}=1V,I_C=10mA V_{CE}=1V,I_C=50mA V_{CE}=1V,I_C=100mA	40 70 100 60 30	300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA,I_B=1mA I_C=50mA,I_B=5mA		0.25 0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA,I_B=1mA I_C=50mA,I_B=5mA	0.65	0.85 0.95	V
Transition frequency	f_T	V_{CE}=20V, I_E= 10mA f=100MHz	300		MHz
Collector output capacitance	C_{ob}	V_{CB}=5V, I_E=0,f=1MHz		4	pF
Noise figure	NF	V_{CE}=5V,I_C=0.1mA, f=1KHz,R_g=1KΩ		5	dB
Delay time	t_d	V_{CC}=3V,V_{BE}=0.5V, I_C=10mA,I_B=1mA		35	nS
Rise time	t_r			35	nS
Storage time	t_s	V_{CC}=3V,I_C=10mA, I_{B1}=I_{B2}=1mA		200	nS
Fall time	t_f			50	nS

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

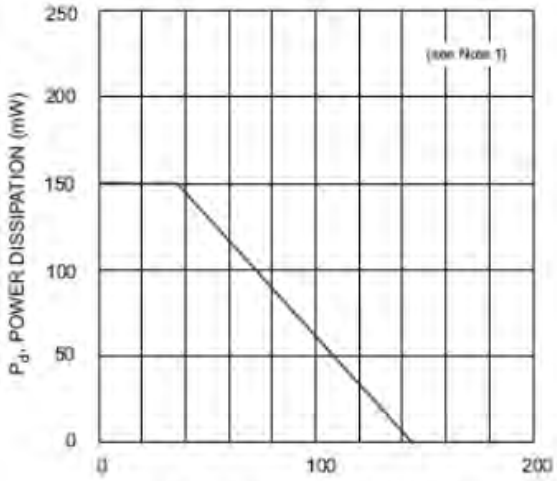

Fig. 1, Power Derating Curve

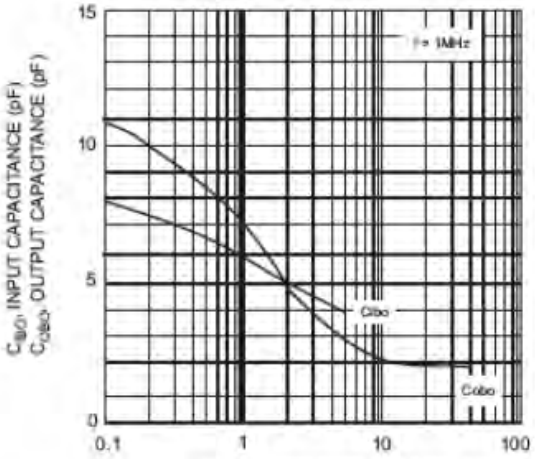

Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

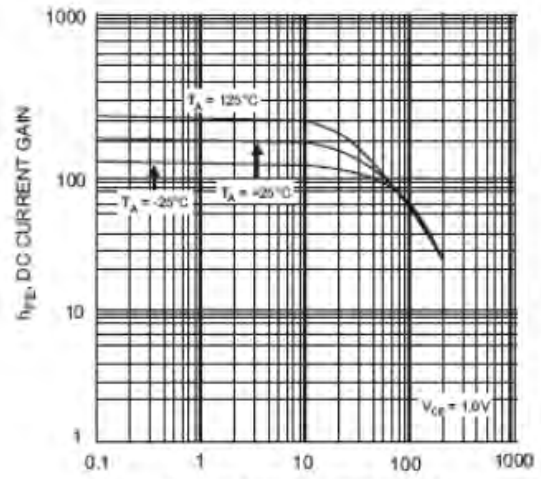

Fig. 3, Typical DC Current Gain vs Collector Current

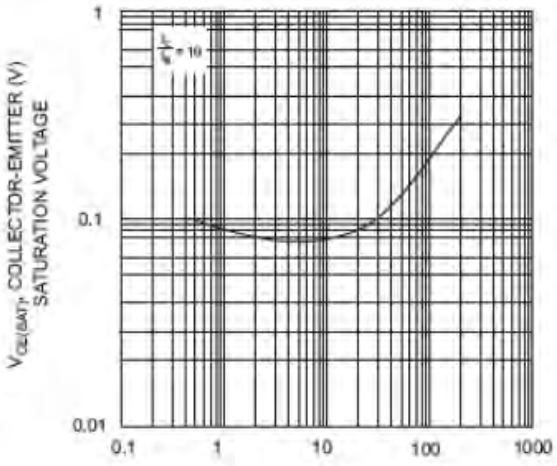

Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

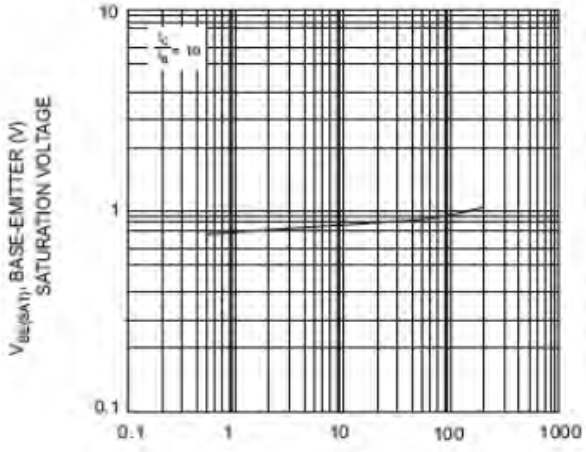

Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current