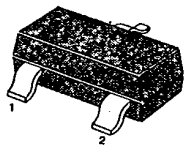
MMBT3903 NPN EPITAXIAL SILICON TRANSISTOR

T-29-19

GENERAL PURPOSE TRANSISTOR

SOT-23



1. Base 2. Emitter 3. Collector

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Collector Dissipation	P_C	350	mW
Storage Temperature	Tstg	150	°C

*Refer to MMBT3904 for graphs

ELECTRICAL CHARACTERISTICS (T_a=25°C)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=10μA, I_E=0	60		V
*Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, I_B=0	40		V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA, I_C=0	6		V
Collector Cutoff Current	I_{CEX}	V_{CE}=30V, V_{EB}=3V		50	nA
*DC Current Gain	h_{FE}	V_{CE}=1V, I_C=0.1mA	20		
		V_{CE}=1V, I_C=1mA	35		
		V_{CE}=1V, I_C=10mA	50	150	
		V_{CE}=1V, I_C=50mA	30		
		V_{CE}=1V, I_C=100mA	15		
*Collector-Emitter Saturation Voltage	V_{CE} (sat)	I_C=10mA, I_B=1mA		0.2	V
		I_C=50mA, I_B=5mA		0.3	V
*Base-Emitter Saturation Voltage	V_{BE} (sat)	I_C=10mA, I_B=1mA	0.65	0.85	V
		I_C=50mA, I_B=5mA		0.95	V
Current Gain-Bandwidth Product	f_T	I_C=10mA, V_{CE}=20V f=100MHz	250		MHz
Output Capacitance	Cob	V_{CB}=5V, I_E=0 f=1MHz		4	pF
Noise Figure	NF	I_C=100μA, V_{CE}=5V R_S=1KΩ f=10Hz to 15.7KHz		6	dB
Turn On Time	ton	V_{CC}=3V, V_{BE}=0.5V I_C=10mA, I_{B1}=1mA		70	ns
Turn Off Time	toff	V_{CC}=3V, I_C=10mA I_{B1}=I_{B2}=1mA		225	ns

*Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Marking