MMBTA93 TRANSISTOR (PNP)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-23-3

FEATURES

- High Voltage Application
- Telephone Application
- Complementary to MMBTA43

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-200	V
V_{CEO}	Collector-Emitter Voltage	-200	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-500	mA
P_C	Collector Power Dissipation	350	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	357	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA, I_E=0	-200			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-200			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA, I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-200V, I_E=0			-0.25	μA
Collector cut-off current	I_{CEO}	V_{CE}=-200V, I_B=0			-0.25	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V, I_C=0			-0.1	μA
DC current gain	$h_{FE(1)}$*	V_{CE}=-10V, I_C=-10mA	40			
	$h_{FE(2}$*$_)$	V_{CE}=-10V, I_C=-1mA	25			
	$h_{FE(3)}$*	V_{CE}=-10V, I_C=-30mA	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=-20mA, I_B=-2mA			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=-20mA, I_B=-2mA			-0.9	V
Transition frequency	f_T	V_{CE}=-20V,I_C=-10mA, f=100MHz	50			MHz
Collector output capacitance	C_{ob}	V_{CB}=-20V, I_E=0, f=1MHz			8	pF

*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.