JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

SOT-23 Plastic-Encapsulate Transistors

MMBT1616A TRANSISTOR (NPN)

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

- Audio frequency power amplifier
- Medium speed switching

MARKING: 16A

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Power Dissipation	750	mW
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55 - +150	℃

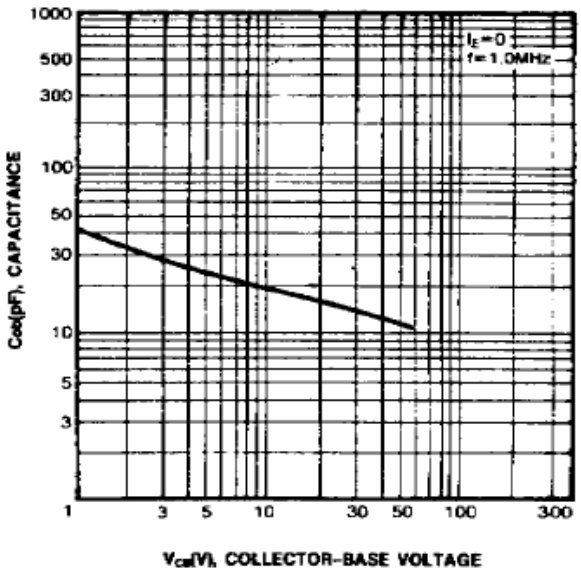
ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=0.1mA, I_E=0	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA, I_B=0	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=6V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=2V, I_C=100mA	135		400	
	$h_{FE(2)}$	V_{CE}=2V, I_C=1A	81			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=1A, I_B=50mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=1A, I_B=50mA			1.2	V
Base-emitter voltage	V_{BE}	V_{CE}=2V, I_C=50mA	0.6		0.7	V
Transition frequency	f_T	V_{CE}=2V, I_C=100mA	100			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz			19	pF
Turn on time	t_{on}	V_{CE}=10V,I_C=100mA I_{B1}=-I_{B2}=10mA		0.07		μS
Fall time	t_f	V_{CE}=10V,I_C=100mA I_{B1}=-I_{B2}=10mA $V_{BE(off)}$=-2~-3V		0.07		μS
Storage time	t_S	V_{CE}=10V,I_C=100mA I_{B1}=-I_{B2}=10mA		0.95		μS

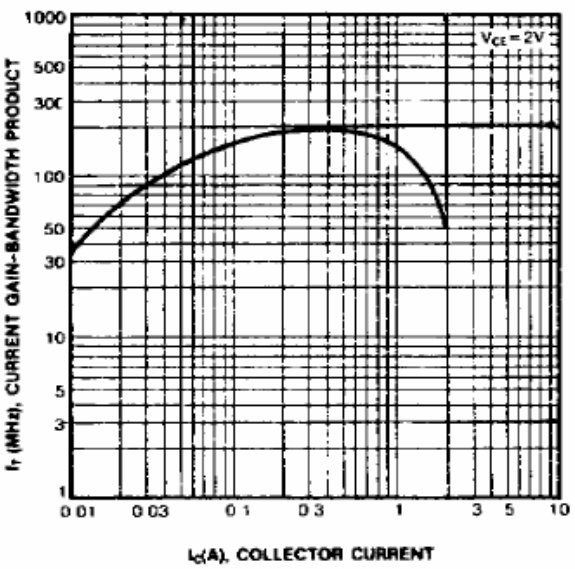
Typical Characteristics

MMBT1616A

COLLECTOR OUTPUT CAPACITANCE



CURRENT GAIN-BANDWIDTH PRODUCT



SWITCHING TIME