



MMBT1616A TRANSISTOR (NPN)

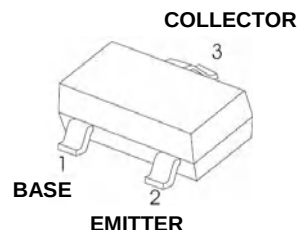
FEATURES

- Audio frequency power amplifier
- Medium speed switching

MARKING:16A

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
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	1	A
P_{C}	Collector Power Dissipation	350	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	357	$^{\circ}\text{C}/\text{W}$
$T_{\text{J}}, T_{\text{stg}}$	Operation Junction and Storage Temperature Range	$-55\sim+150$	$^{\circ}\text{C}$



SOT - 23

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

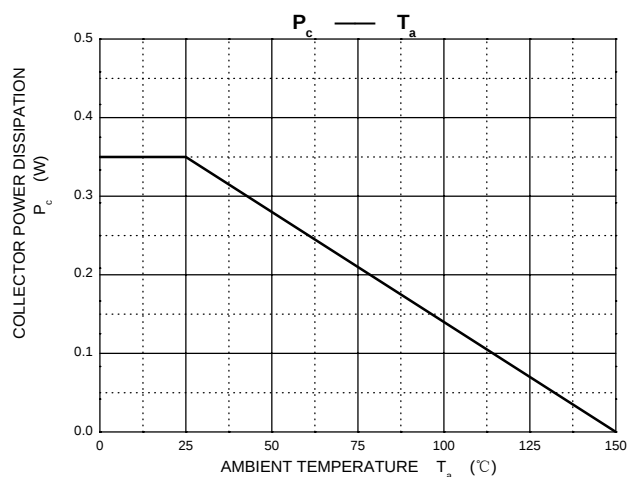
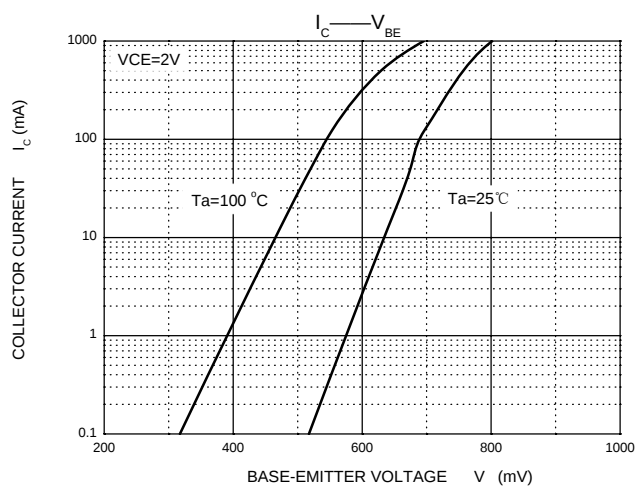
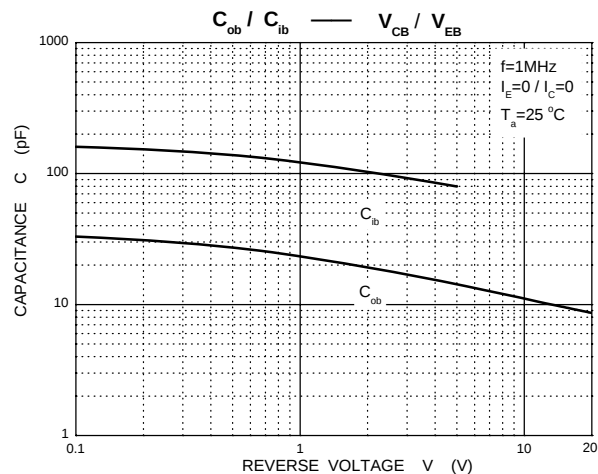
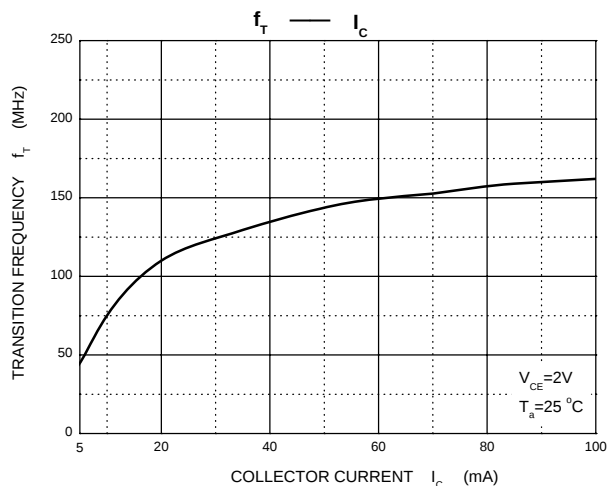
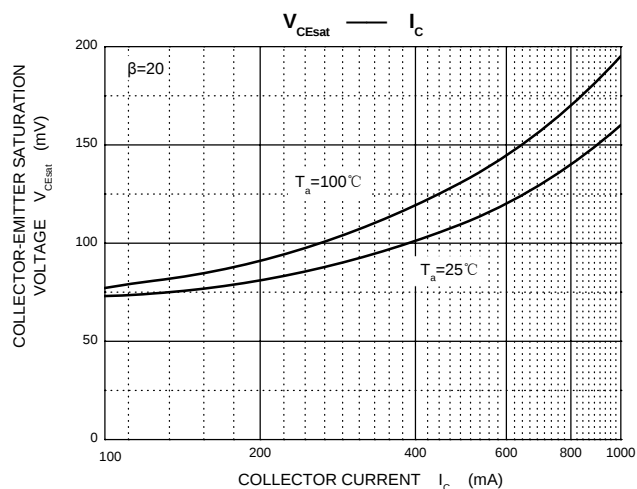
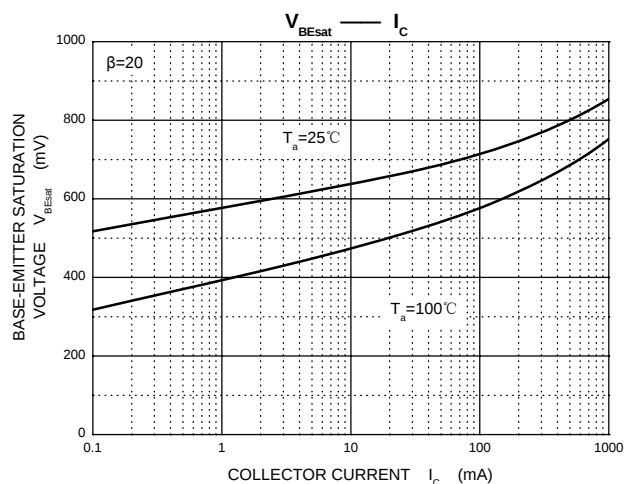
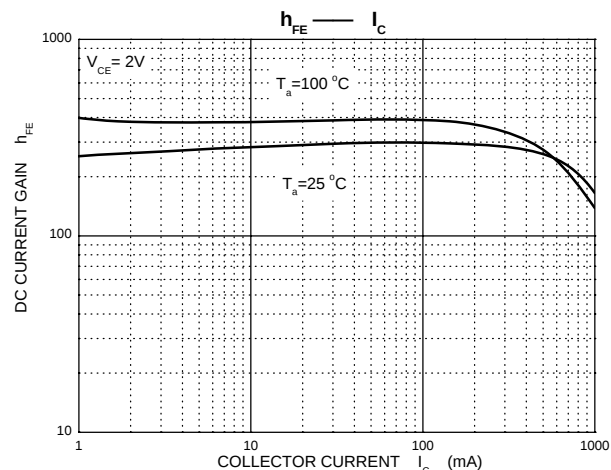
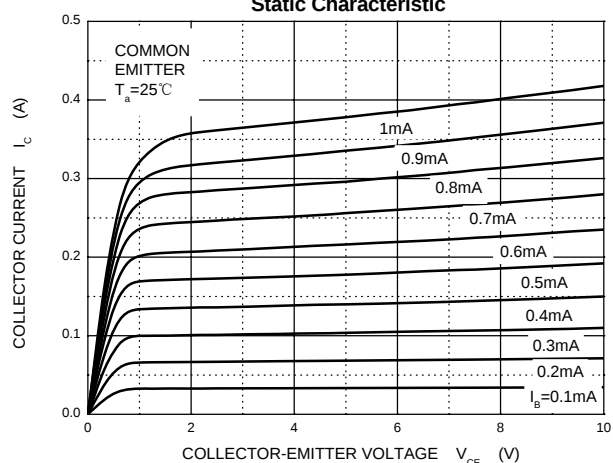
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=10\mu\text{A}, I_{\text{E}}=0$	120			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=2\text{mA}, I_{\text{B}}=0$	60			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}, I_{\text{C}}=0$	6			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=60\text{V}, I_{\text{E}}=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=6\text{V}, I_{\text{C}}=0$			100	nA
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=100\text{mA}$	135		600	
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=1\text{A}$	81			
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	$I_{\text{C}}=1\text{A}, I_{\text{B}}=50\text{mA}$			0.3	V
Collector-emitter saturation voltage	$V_{\text{BE}(\text{sat})}$	$I_{\text{C}}=1\text{A}, I_{\text{B}}=50\text{mA}$			1.2	V
Base-emitter voltage	V_{BE}	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=50\text{mA}$	0.6		0.7	V
Transition frequency	f_{T}	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=100\text{mA}, f=100\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{\text{CB}}=10\text{V}, I_{\text{E}}=0, f=1\text{MHz}$			19	pF

CLASSIFICATION OF $h_{\text{FE}(1)}$

RANK	Y	G	L
RANGE	135~270	200~400	300~600



Static Characteristic

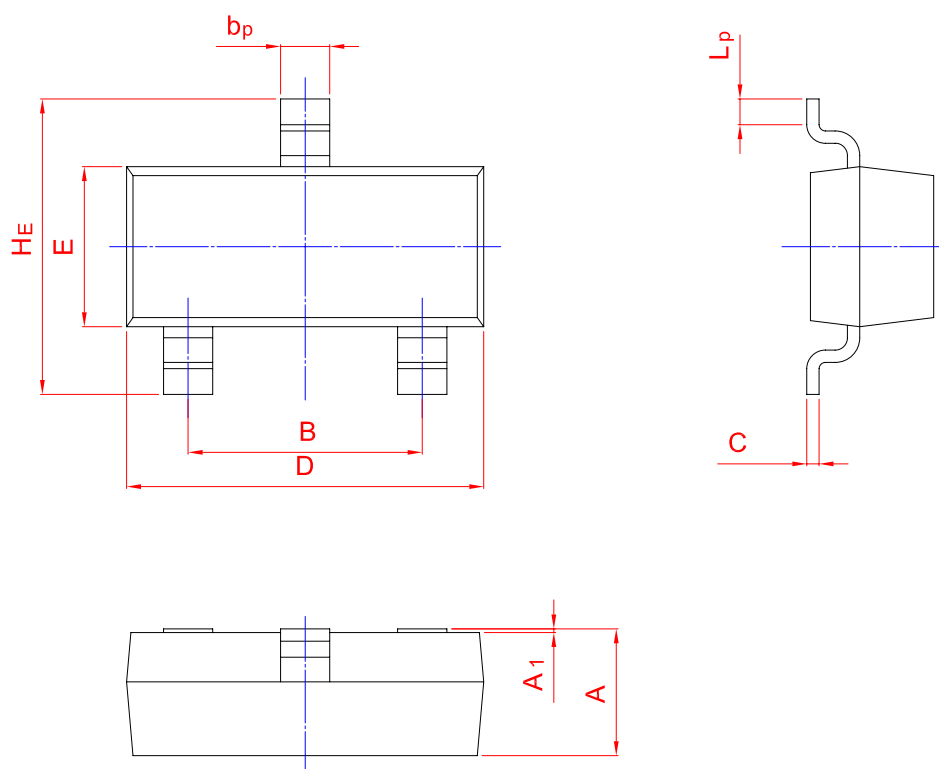
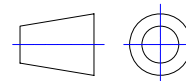




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20