



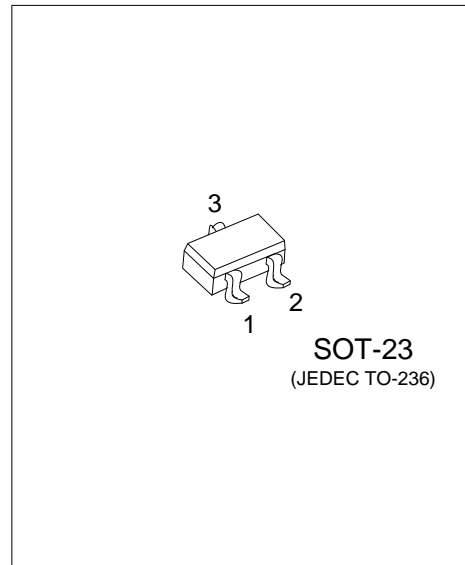
MMBT1616/A

NPN EPITAXIAL SILICON TRANSISTOR

NPN EPITAXIAL SILICON TRANSISTOR

■ DESCRIPTION

- * Audio frequency power amplifier
- * Medium speed switching



■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT1616L-x-AE3-R	MMBT1616G-x-AE3-R	SOT-23	B	E	C	Tape Reel
MMBT1616AL-x-AE3-R	MMBT1616AG-x-AE3-R	SOT-23	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter Collector

<p>MMBT1616G-x-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

UTC MMBT1616	UTC MMBT1616A
<p>L: Lead Free G: Halogen Free</p>	<p>L: Lead Free G: Halogen Free</p>

MMBT1616/A

NPN EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT	
Collector to Base Voltage	MMBT1616	60	V	
	MMBT1616A	120		
Collector to Emitter Voltage	MMBT1616	50	V	
	MMBT1616A	60		
Emitter to Base Voltage	V _{EBO}	6	V	
Collector Current	DC	I _C	1	A
Collector Current	Pulse	I _C	2	A
Total Collector Dissipation	P _D	350	mW	
Junction Temperature	T _J	+150	°C	
Storage Temperature	T _{STG}	-55 ~ +150	°C	

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Pulse width ≤ 10ms, Duty cycle < 50%.

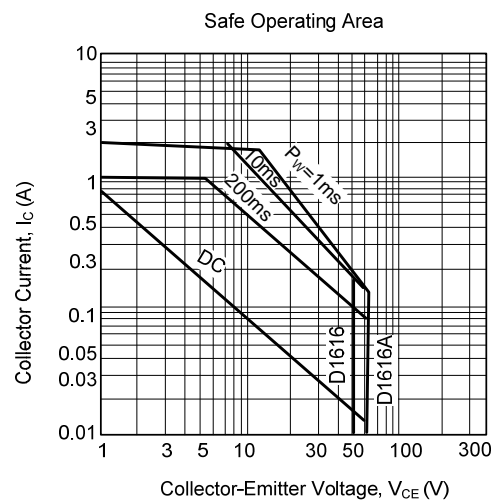
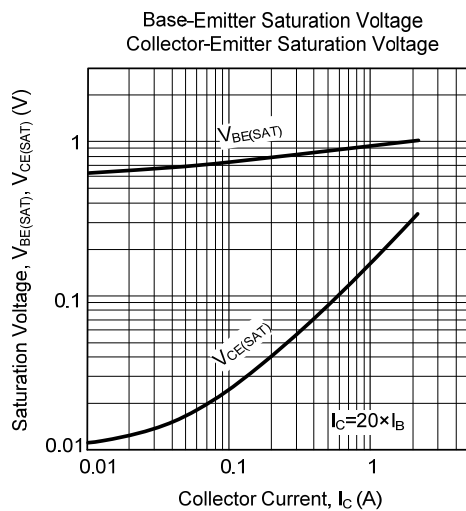
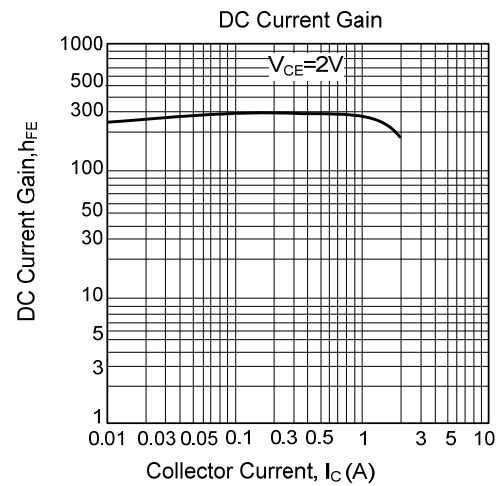
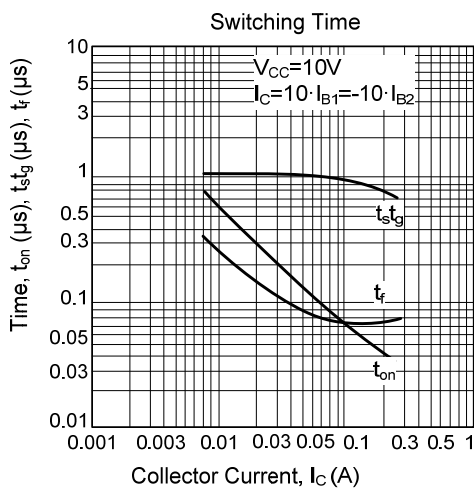
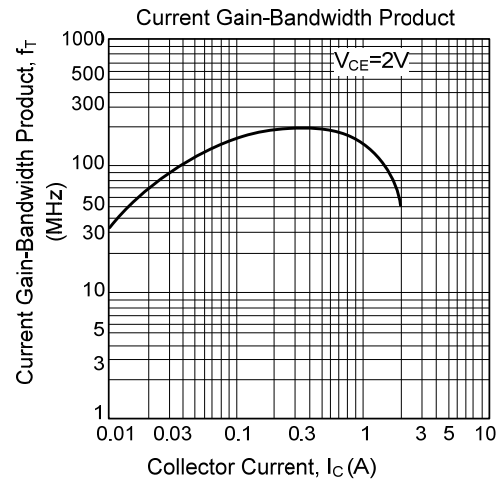
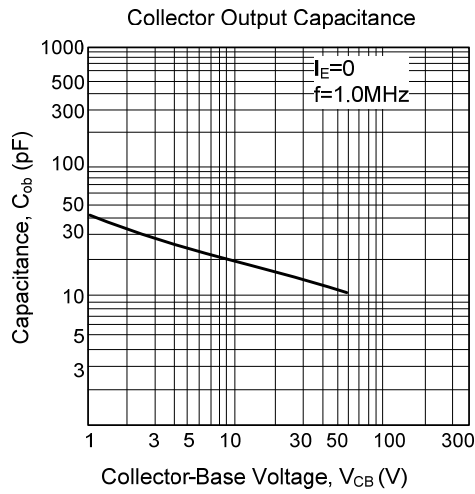
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-Off Current	I _{CBO}	V _{CB} =60V			100	nA
Emitter Cut-Off Current	I _{EBO}	V _{EB} = 6V			100	nA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =1A, I _B =50mA		0.15	0.3	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C =1A, I _B =50mA		0.9	1.2	V
Base Emitter On Voltage	V _{BE(ON)}	V _{CE} =2V, I _C =50mA	600	640	700	mV
DC Current Gain	h _{FE1}	V _{CE} =2V, I _C =100mA	135		600	
	h _{FE2}	V _{CE} =2V, I _C =1A	81			
Current Gain Bandwidth Product	f _T	V _{CE} =2V, I _C =100mA	100	160		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz			19	pF
Turn On Time	t _{on}	V _{CE} =10V, I _C =100mA		0.07		us
Storage Time	t _s	I _{B1} =-I _{B2} =10mA		0.95		us
Fall Time	t _f	V _{BE(off)} =-2~-3V		0.07		us

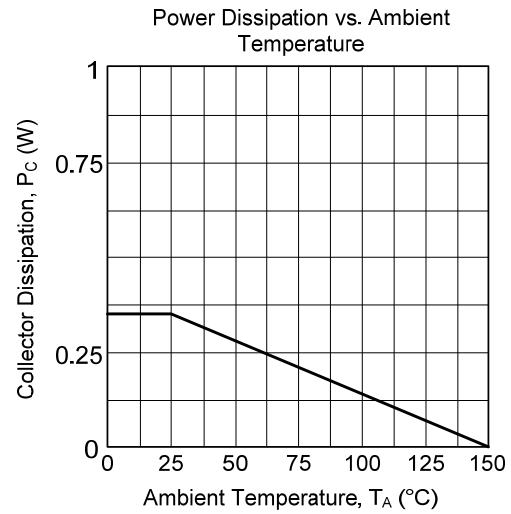
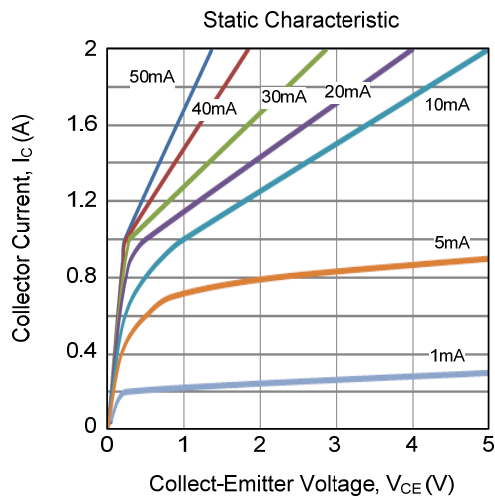
■ CLASSIFICATION OF h_{FE1}

RANK	Y	G	L
h _{FE1}	135-270	200-400	300-600

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



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