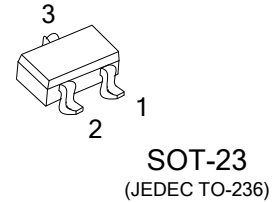


**MMBT1616/A****NPN EPITAXIAL SILICON TRANSISTOR****NPN EPITAXIAL SILICON TRANSISTOR****DESCRIPTION**

- * Audio frequency power amplifier
- * Medium speed switching

**ORDERING INFORMATION**

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

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

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

UTC MMBT1616	UTC MMBT1616A
16G	16AG

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage	MMBT1616	V _{CBO}	60	V
	MMBT1616A		120	
Collector to Emitter Voltage	MMBT1616	V _{CEO}	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 Power Dissipation (T _A =25°C)		P _D	350	mW
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C

Note (*) Pulse width≤10ms, Duty cycle<50%

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.

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

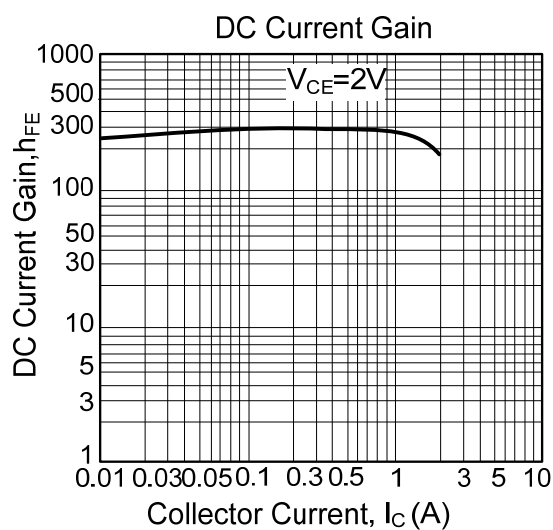
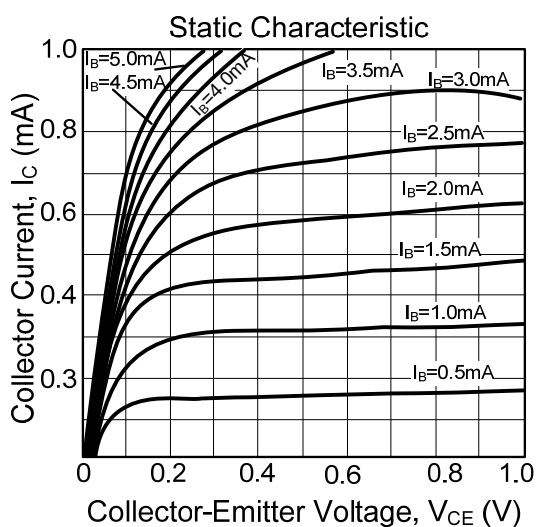
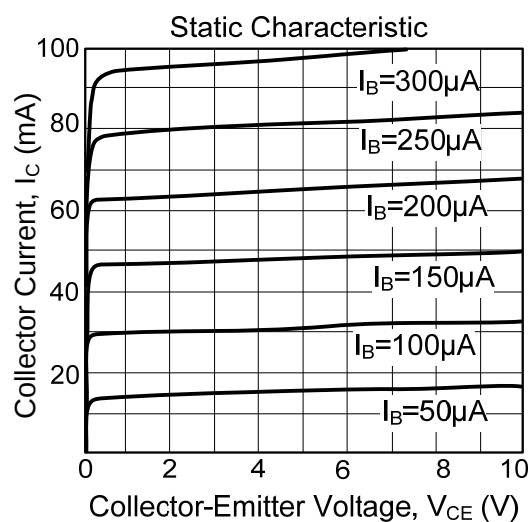
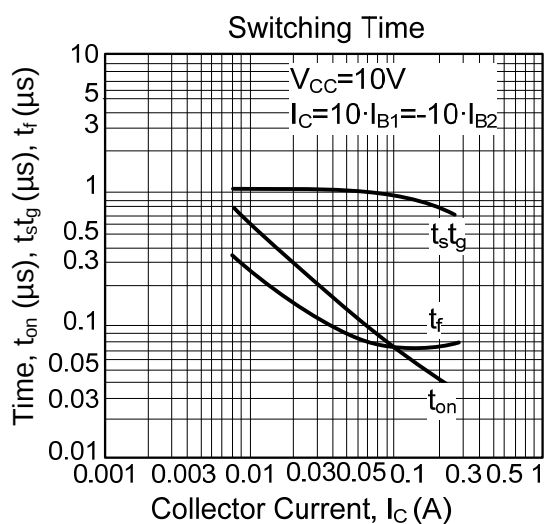
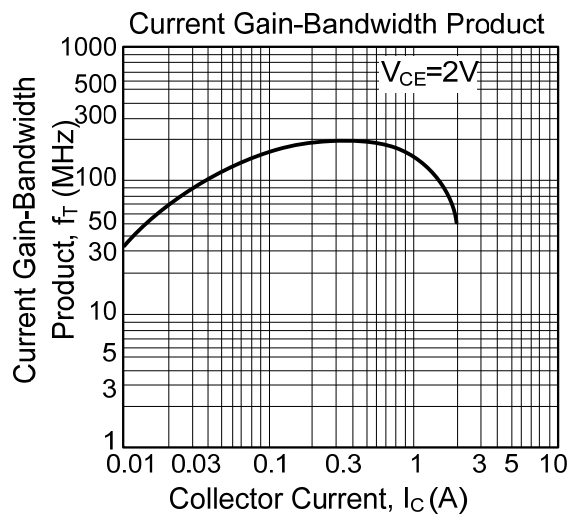
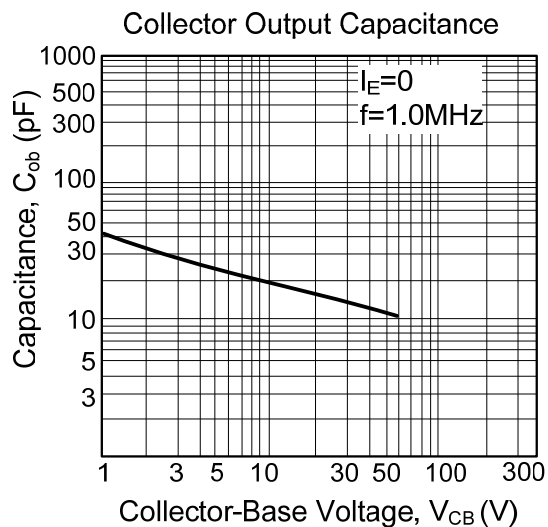
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-Off Current	I _{CBO}	V _{CB} =60V			100	nA
Emitter Cut-Off Current	I _{EBO}	V _{EB} = 6V			100	nA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =1A, I _B =50mA		0.15	0.3	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C =1A, I _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	MMBT1616	135	600	
			MMBT1616A	135	400	
	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}

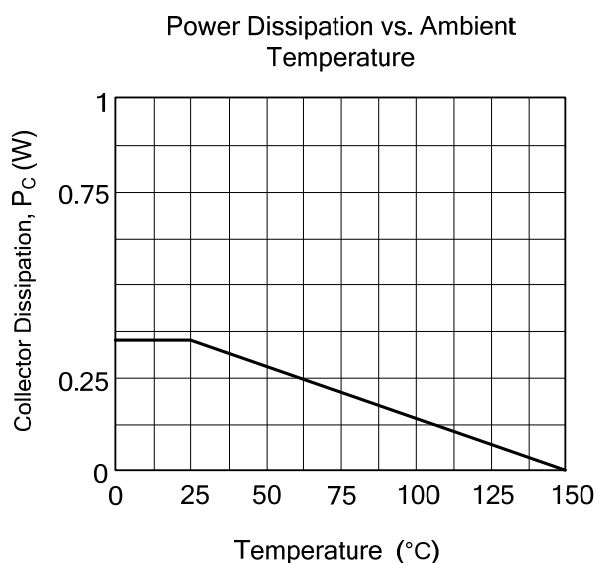
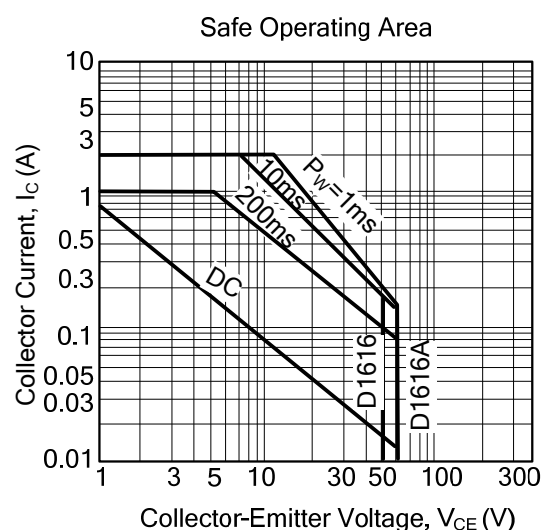
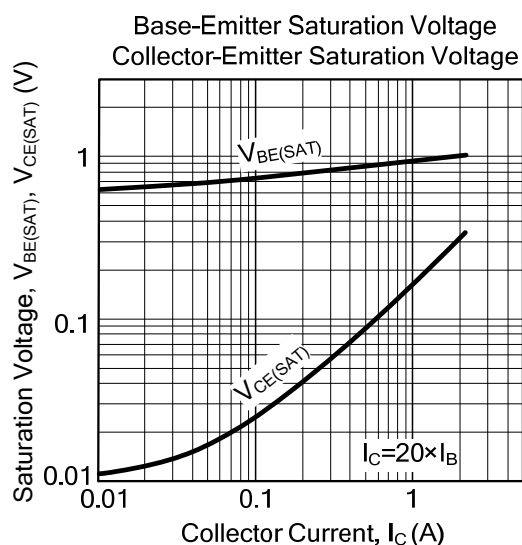
RANK	Y	G	L
h _{FE1}	135-270	200-400	300-600

Note: L rank is not available for the MMBT1616A.

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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