



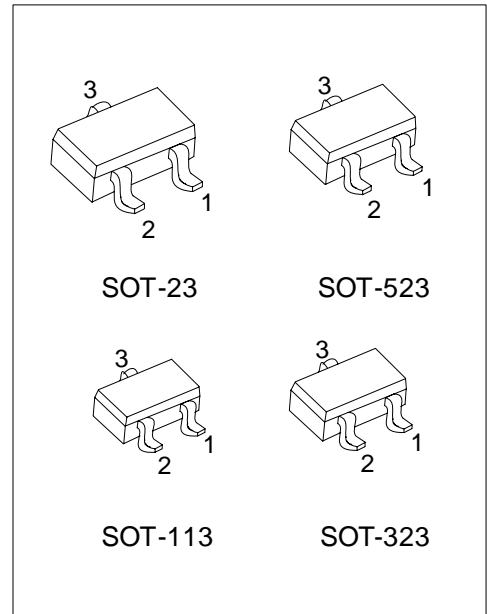
MMBT1815

NPN SILICON TRANSISTOR

HIGH FREQUENCY NPN AMPLIFIER TRANSISTOR

FEATURES

- *Collector-Emitter Voltage:
BV_{CEO}=50V
- *Collector current up to 150mA
- *High h_{FE} linearity
- *Complement to MMBT1015



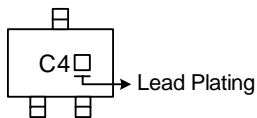
*Pb-free plating product number: MMBT1815L

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MMBT1815-x-AC3-R	MMBT1815L-x-AC3-R	SOT-113	E	B	C	Tape Reel
MMBT1815-x-AE3-R	MMBT1815L-x-AE3-R	SOT-23	E	B	C	Tape Reel
MMBT1815-x-AL3-R	MMBT1815L-x-AL3-R	SOT-323	E	B	C	Tape Reel
MMBT1815-x-AN3-R	MMBT1815L-x-AN3-R	SOT-523	E	B	C	Tape Reel

<p>MMBT1815L-x-AC3-R</p>	<p>(1) R: Tape Reel (2) AC3: SOT-113, AE3: SOT-23, AL3: SOT-323, AN3: SOT-523 (3) x: refer to Classification of h_{FE1} (4) L: Lead Free Plating, Blank: Pb/Sn</p>
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MARKING



MMBT1815

NPN SILICON TRANSISTOR

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Dissipation (Ta=25°C)	SOT-23	250	mW
	SOT-523/SOT-113/SOT-323	200	mW
Collector Current	I _C	150	mA
Base Current	I _B	50	mA
Junction Temperature	T _J	150	
Storage Temperature	T _{STG}	-55 ~ +150	

Note 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 (Ta=25°C, unless otherwise specified)

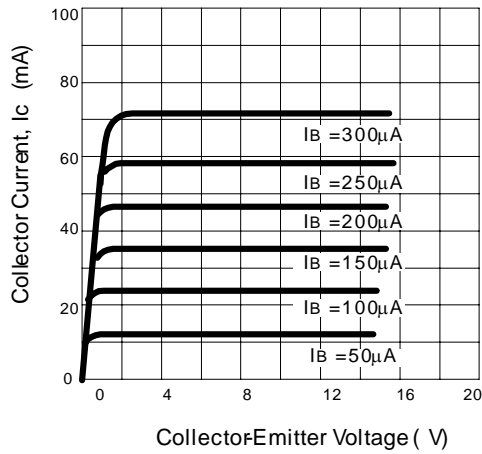
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C = 100mA, I _B = 10mA		0.1	0.25	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C = 100mA, I _B = 10mA			1.0	V
Collector Cut-off Current	I _{CBO}	V _{CB} = 60V, I _E = 0			100	nA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 5V, I _C = 0			100	nA
DC Current Gain	h _{FE1}	V _{CE} = 6V, I _C = 2mA	120		700	
	h _{FE2}	V _{CE} = 6V, I _C = 150mA	25			
Transition Frequency	f _T	V _{CE} = 10V, I _C = 50mA	80			MHz
Output Capacitance	C _{OB}	V _{CB} = 10V, I _E = 0, f = 1MHz		2.0	3.0	pF
Noise Figure	NF	I _C = -0.1mA, V _{CE} = 6V R _G = 10kΩ, f = 100Hz		1.0	1.0	dB

■ CLASSIFICATION OF h_{FE1}

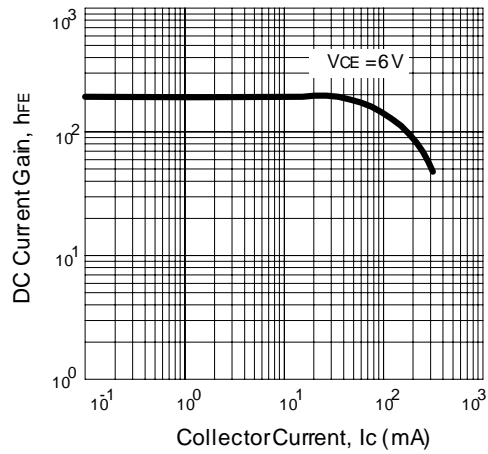
RANK	Y	GR	BL
RANGE	120-240	200-400	350-700

TYPICAL CHARACTERISTICS

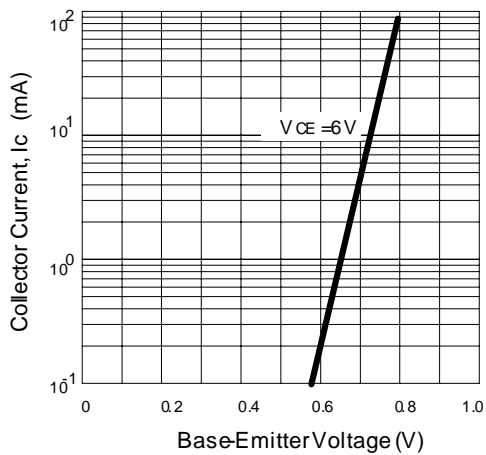
Static Characteristics



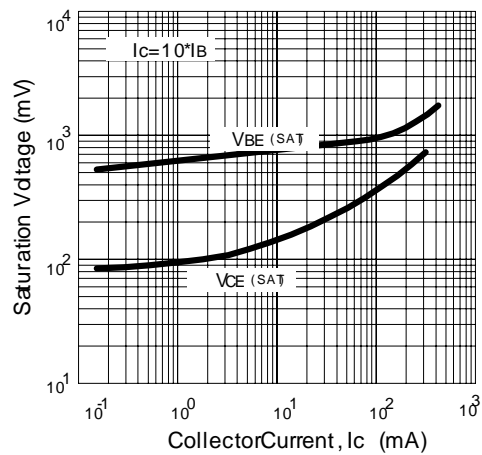
DC Current Gain



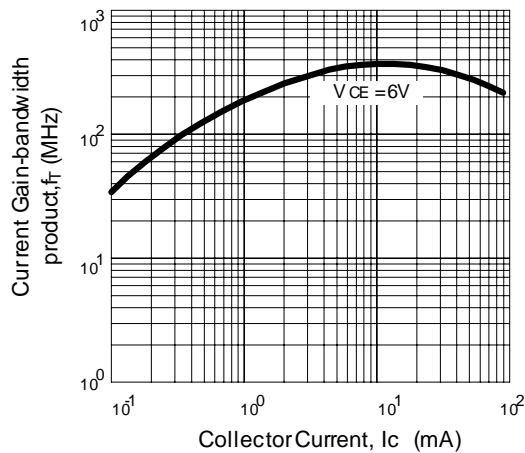
Base-Emitter On Voltage



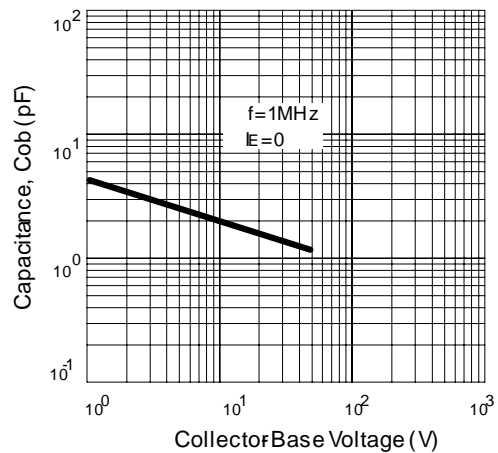
Saturation Voltage



Current Gain-Bandwidth Product



Collector Output Capacitance



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