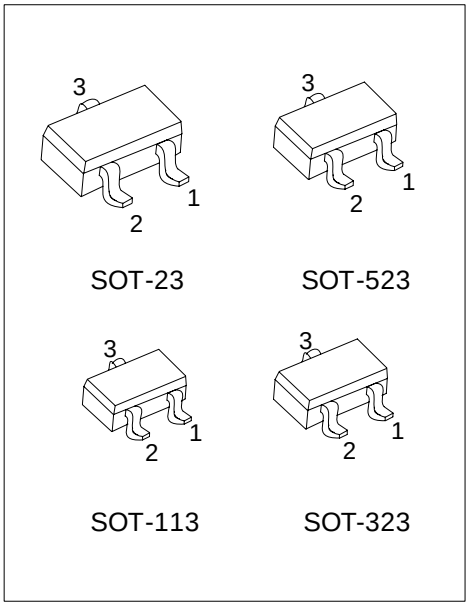
MMBT1015

PNP SILICON TRANSISTOR

LOW FREQUENCY PNP AMPLIFIER TRANSISTOR



*Pb-free plating product number: MMBT1015L

■ FEATURES

*Collector-Emitter Voltage:
BV_{CEO}=-50V
*Collector current up to 150mA
*High h_{FE} linearity
*Complement to MMBT1815

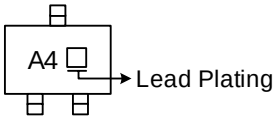
■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MMBT1015-x-AC3-R	MMBT1015L-x-AC3-R	SOT-113	E	B	C	Tape Reel
MMBT1015-x-AE3-R	MMBT1015L-x-AE3-R	SOT-23	E	B	C	Tape Reel
MMBT1015-x-AL3-R	MMBT1015L-x-AL3-R	SOT-323	E	B	C	Tape Reel
MMBT1015-x-AN3-R	MMBT1015L-x-AN3-R	SOT-523	E	B	C	Tape Reel

MMBT1015L-x-AC3-R
(1)Packing Type
(2)Package Type
(3)Rank
(4)Lead Plating

(1) R: Tape Reel
(2) AC3: SOT-113, AE3: SOT-23, AL3: SOT323, AN3: SOT-523
(3) x: refer to Classification of h_{FE1}
(4) L: Lead Free Plating, Blank: Pb/Sn

■ MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-50	V
Collector-Emitter Voltage		V_{CEO}	-50	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Dissipation	SOT-23	P_C	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	125	℃
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)

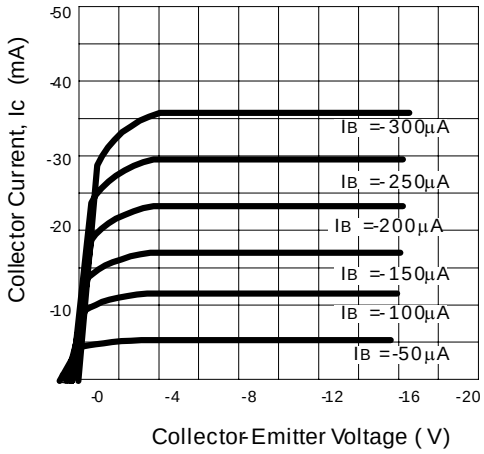
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	Ic = -100μA, I_E = 0	-50			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	Ic = -10mA, I_B = 0	-50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E = -10μA, Ic = 0	-5			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	Ic = -100mA, I_B = -10mA		-0.1	-0.3	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	Ic = -100mA, I_B = -10mA			-1.1	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -50V, I_E = 0			-100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = -5V, Ic = 0			-100	nA
DC Current Gain	h_{FE1}	V_{CE} = -6V, Ic = -2mA	120		700	
	h_{FE2}	V_{CE} = -6V, Ic = -150mA	25			
Transition Frequency	f_T	V_{CE} = -10V, Ic = -1mA	80			MHz
Output Capacitance	C_{OB}	V_{CB} = -10V, I_E = 0, f = 1MHz		4.0	7.0	pF
Noise Figure	NF	Ic = -0.1mA, V_{CE} = -6V R_G= 1kΩ, f = 100Hz		0.5	6	dB

■ CLASSIFICATION OF h_{FE1}

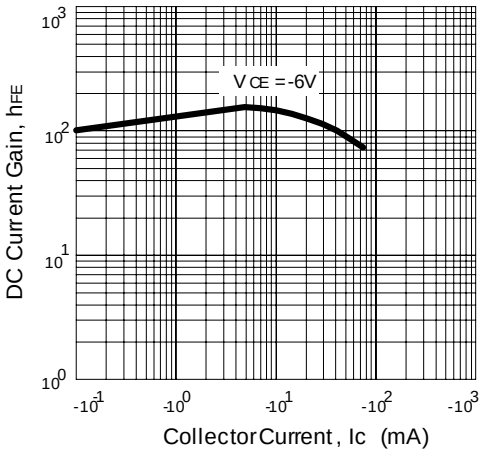
RANK	Y	GR	BL
RANGE	120-240	200-400	350-700

■ TYPICAL CHARACTERISTICS

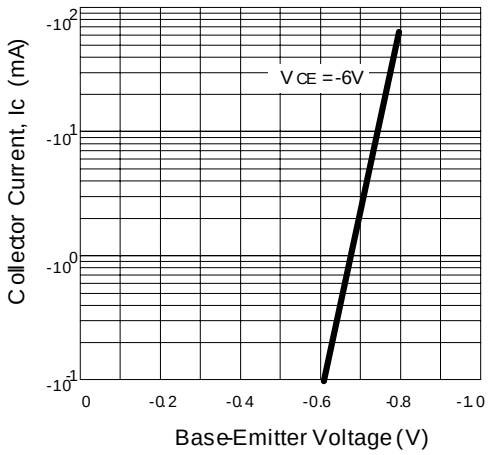
Static Characteristics



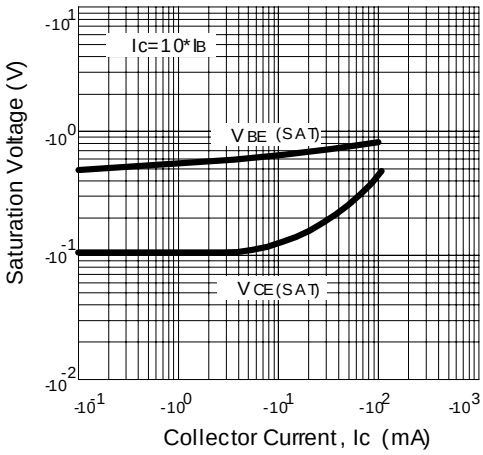
DC Current Gain



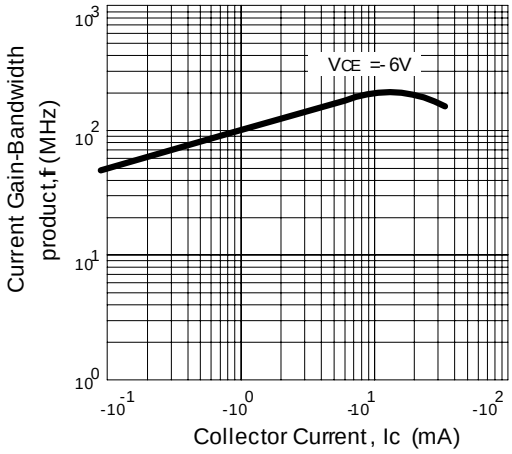
Base-Emitter on Voltage



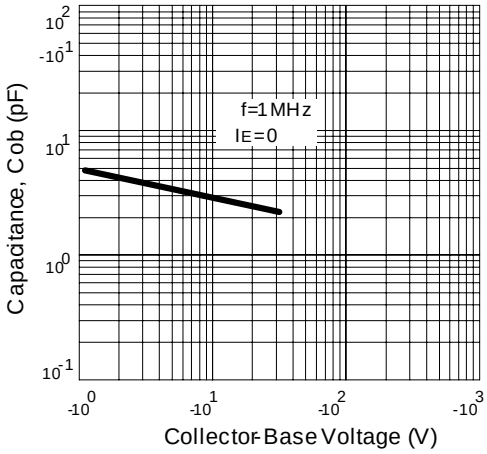
Saturation Voltage



Current Gain-Bandwidth Product



Collector Output Capacitance



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