

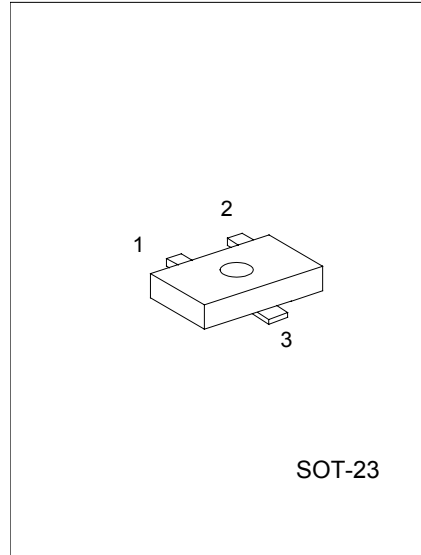
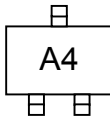
UTCMMBT1015 PNP EPITAXIAL SILICON TRANSISTOR

LOW FREQUENCY PNP AMPLIFIER TRANSISTOR

FEATURES

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

MARKING



1:EMITTER 2:BASE 3: COLLECTOR

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$,unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V_{CB0}	-50	V
Collector-emitter voltage	V_{CE0}	-50	V
Emitter-base voltage	V_{EB0}	-5	V
Collector dissipation	P_c	250	mW
Collector current	I_c	-150	mA
Base current	I_B	-50	mA
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature	T_{STG}	-65 ~ +150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV_{CB0}	$I_c = -100\mu A, I_E = 0$	-50			V
Collector-emitter breakdown voltage	BV_{CE0}	$I_c = -10mA, I_B = 0$	-50			V
Emitter-base breakdown voltage	BV_{EB0}	$I_E = -10\mu A, I_c = 0$	-5			V
Collector cut-off current	I_{CB0}	$V_{CB} = -50V, I_E = 0$			-100	nA
Emitter cut-off current	I_{EB0}	$V_{EB} = -5V, I_c = 0$			-100	nA
DC current gain(note)	h_{FE1} h_{FE2}	$V_{CE} = -6V, I_c = -2mA$ $V_{CE} = -6V, I_c = -150mA$	120 25		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = -100mA, I_B = -10mA$		-0.1	-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_c = -100mA, I_B = -10mA$			-1.1	V
Current gain bandwidth product	f_T	$V_{CE} = -10V, I_c = -1mA$	80			MHz
Output capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$		4.0	7.0	pF

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PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Noise Figure	NF	$I_c = -0.1\text{mA}$, $V_{CE} = -6\text{V}$ $R_G = 1\text{k}\Omega$, $f = 100\text{Hz}$		0.5	6	dB

CLASSIFICATION OF h_{FE1}

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

TYPICAL CHARACTERISTIC CURVES

Fig.1 Static characteristics

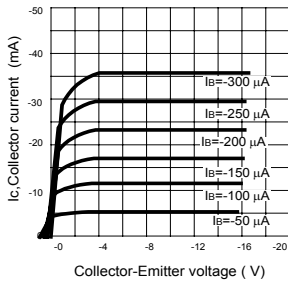


Fig.2 DC current Gain

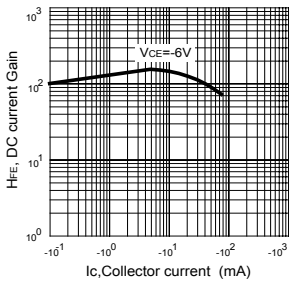


Fig.3 Base-Emitter on Voltage

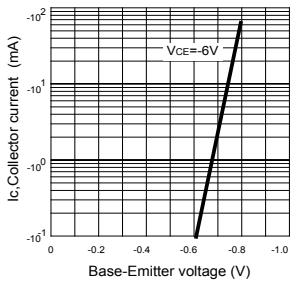


Fig.4 Saturation voltage

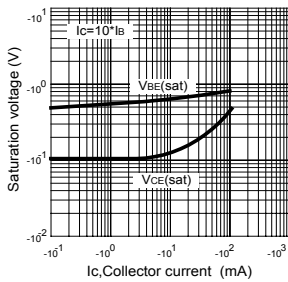


Fig.5 Current gain-bandwidth product

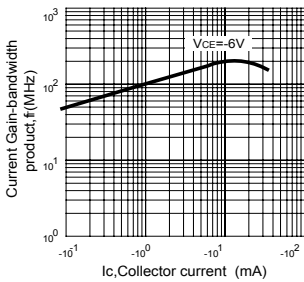


Fig.6 Collector output Capacitance

