SOT323 PNP SILICON PLANAR GENERAL PURPOSE TRANSISTORS

ZUMT860B ZUMT860C

ISSUE 1 - DECEMBER 1998

Partmarking Detail: ZUMT860B T2B
ZUMT860C T22



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CES}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-100	mA
Peak Pulse Current	I_{EM}	-200	mA
Base Current	I_{BM}	-200	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	330	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

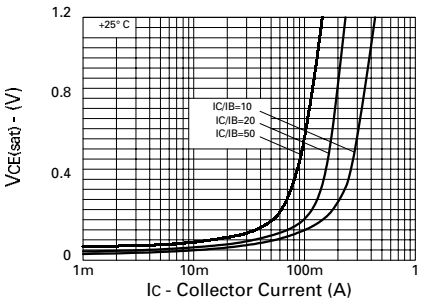
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector Cut-Off Current	I_{CBO}			-15 -4	nA µA	V_{CB} = -30V V_{CB} = -30V, T_{amb}=150°C
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-75	-250	mV	I_C=-10mA, I_B=-0.5mA
			-250	-650	mV	I_C=-100mA, I_B=-5mA
			-300	-600	mV	I_C=-10mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-700 -850		mV	I_C=-10mA ,I_B=-0.5mA I_C=-100mA,I_B=-5mA
Base-Emitter Voltage	V_{BE}	-580	-650	-750 -820	mV	I_C=-2mA, V_{CE}=-5V I_C=-10mA, V_{CE}=-5V

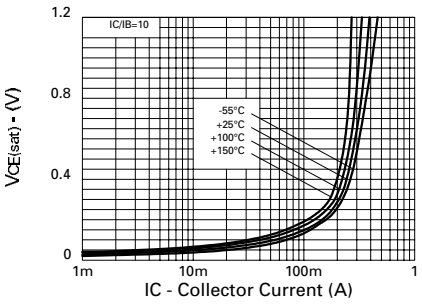
* Collector-Emitter Saturation Voltage at I_C = 10mA for the characteristics going through the operating point I_C = 11mA, V_{CE} = 1V at constant base current.

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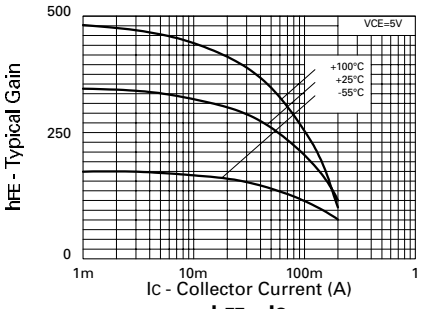
TYPICAL CHARACTERISTICS



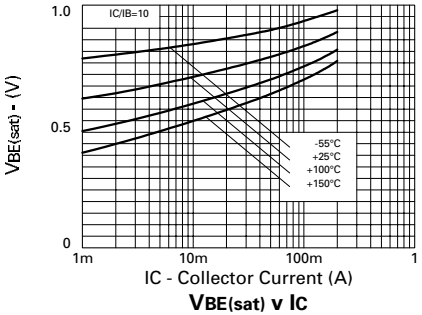
VCE(sat) v IC



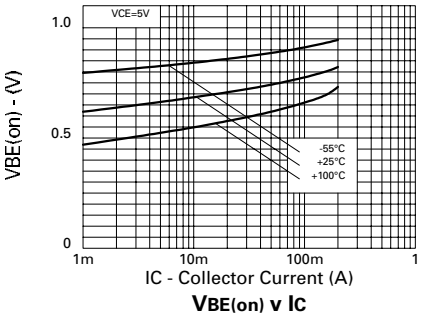
VCE(sat) v IC



hFE v IC



VBE(sat) v IC



VBE(on) v IC

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ELECTRICAL CHARACTERISTICS (Continued)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Noise Figure		N	-	1	4	dB	V_{CB} = -5V, I_C=-200μA, R_G=2kΩ, f=1kHz, Δf=200Hz
			–	1	3	dB	V_{CB} = -5V, I_C=-200μA, R_G=2kΩ, f=30Hz to 15kHz at -3dB points
Equivalent Noise Voltage		e_n	–	–	110	nV	V_{CB} = -5V, I_C=-200μA, R_G=2kΩ, f=10Hz to 50Hz at -3dB points
Dynamic Characteristics	Group B	h_{ie}	3.2	4.5	8.5	kΩ	V_{CE}=-5V Ic=-2mA f=1kHz
	Group C		6	8.7	15	kΩ	
	Group B	h_{re}		2		$x10^{-4}$	
	Group C			3		$x10^{-4}$	
	Group B	h_{fe}	240	330	500		
	Group C		450	600	900		
	Group B	h_{oe}	–	30	60	μs	
	Group C		–	60	110	μs	
Static Forward Current Ratio	Group B	h_{FE}		150			I_C=-0.01mA,V_{CE}=-5V
			220	290	475		I_C=-2mA, V_{CE}=-5V
			–	–	–		I_C=-100mA,V_{CE}=-5V
	Group C	h_{FE}		270			I_C=-0.01mA, V_{CE}=-5V
			420	500	800		I_C=-2mA, V_{CE}=-5V
			–	–	–		I_C=-100mA,V_{CE}=-5V
Transition Frequency		f_T	–	300	–	MHz	I_C=-10mA,V_{CE}=-5V f=100MHz
Collector-Base Capacitance		C_{obo}		4.5		pF	V_{CB}=-10V, f=1MHz