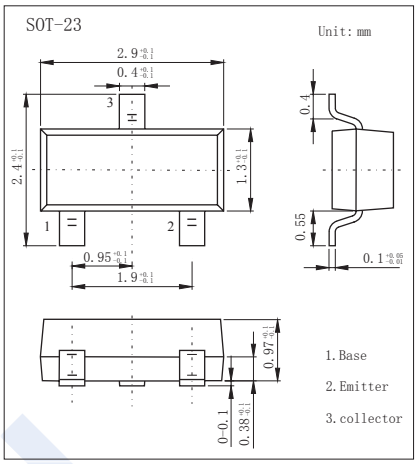
NPN Transistors

2SC3739



■ Features

- High Gain Bandwidth Product:f_T=200MHz(min)
- Complementary to 2SA1464

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	40	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 uA, I_E= 0	60			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	40			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 40V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 4V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500 mA, I_B=50mA		0.25	0.75	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=500 mA, I_B=50mA		1	1.2	
DC current gain	$h_{FE(1)}$	V_{CE}= 1V, I_C= 150mA	75	150	300	
	$h_{FE(2)}$	V_{CE}= 2V, I_C= 500mA	20	75		
Turn-on time	t_{on}	V_{CC}=30V,I_C=150mA,I_{B1}=-I_{B2}=15mA			35	ns
Storage time	t_{stg}				225	
Turn-off time	t_{off}				275	
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E=0,f=1MHz		3.5	8	pF
Transition frequency	f_T	V_{CE}= 10V, I_E=-20mA	200	400		MHz

■ Classification of $h_{fe(1)}$

Type	2SC3739-B12	2SC3739-B13	2SC3739-B14
Range	75-150	100-200	150-300
Marking	B12	B13	B14

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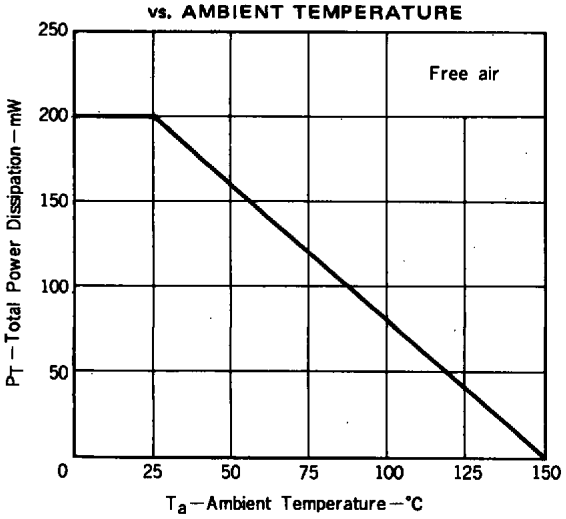
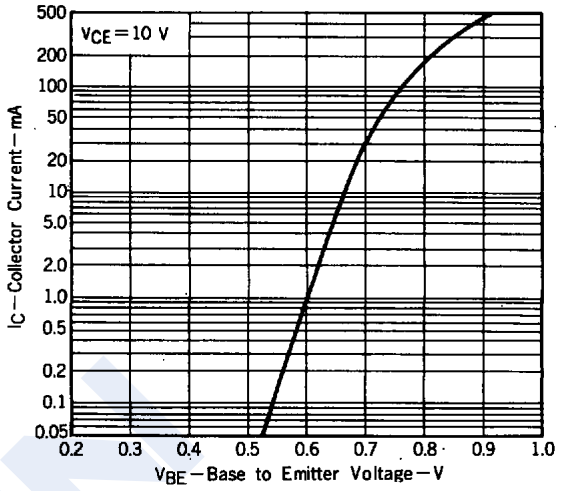
■ Typical Characterisitics

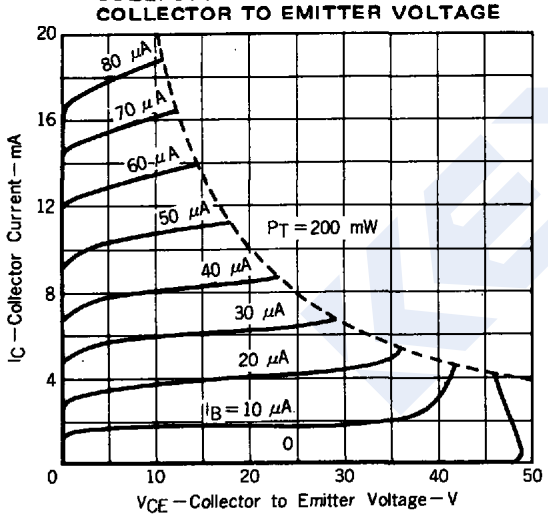
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



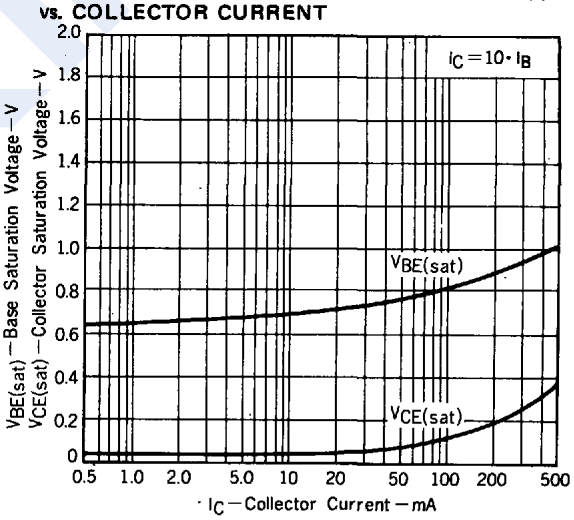
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



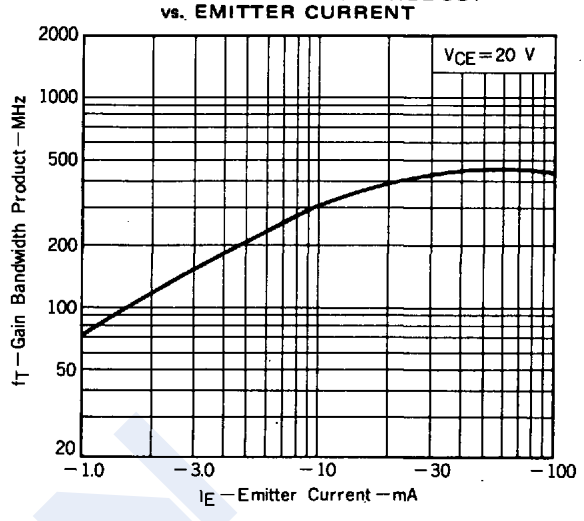
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



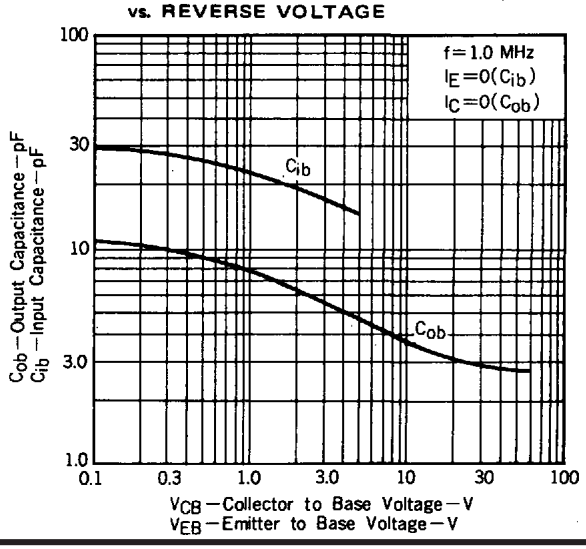
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



NPN Transistors

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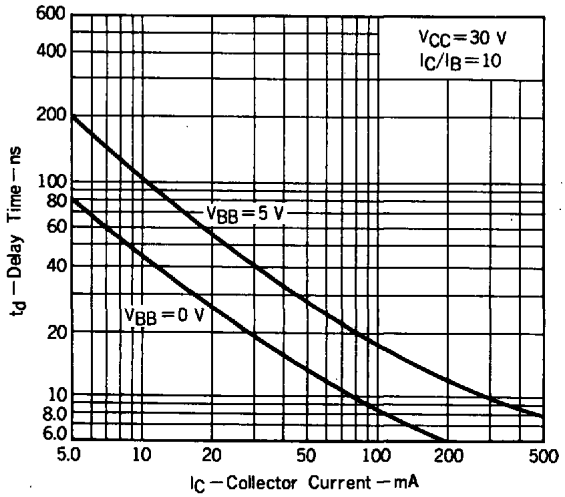
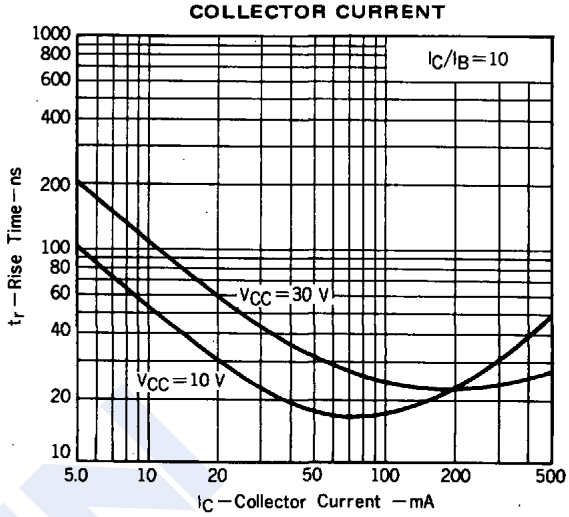
■ Typical Characterisitics

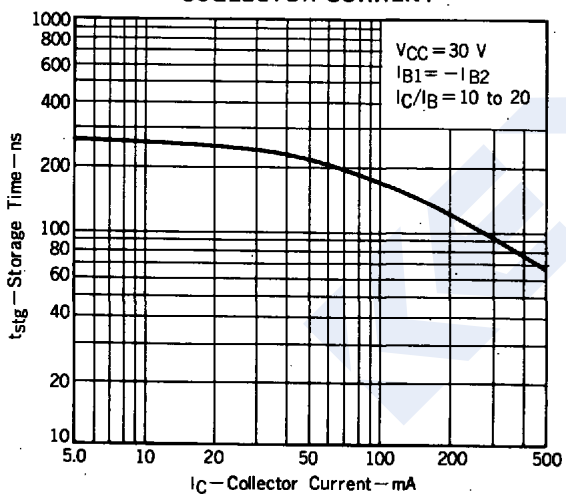
DELAY TIME vs. COLLECTOR CURRENT



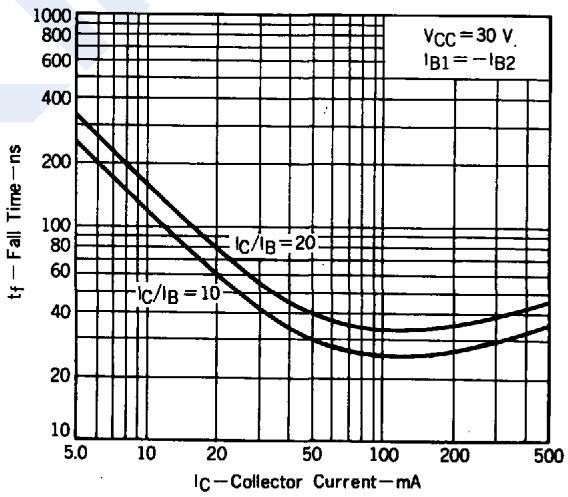
RISE TIME vs. COLLECTOR CURRENT



STORAGE TIME vs. COLLECTOR CURRENT



FALL TIME vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR CURRENT