



## TO-92 Plastic-Encapsulate Transistors

**M8050** TRANSISTOR ( NPN )

### FEATURES

Power dissipation

$$P_{CM} : 0.625 \text{ W ( } T_{amb}=25 \text{ )}$$

Collector current

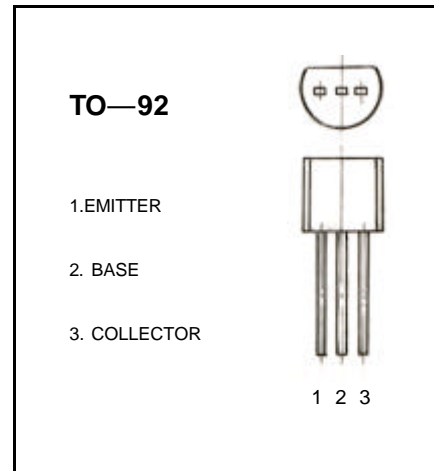
$$I_{CM} : 1 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 40 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55 \text{ to } +150$$



### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25$ unless otherwise specified )

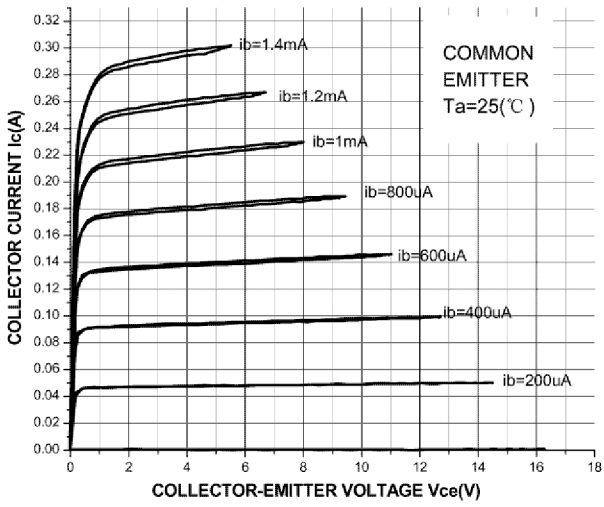
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100 \mu A, I_E=0$	40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=0.1mA, I_B=0$	25		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100 \mu A, I_C=0$	6		V
Collector cut-off current	$I_{CBO}$	$V_{CB}=35V, I_E=0$		0.1	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE}=20V, I_B=0$		0.1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=5mA$	45		
	$h_{FE(2)}$	$V_{CE}=1V, I_C=100mA$	80	300	
	$h_{FE(3)}$	$V_{CE}=1V, I_C=800mA$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=800mA, I_B=80mA$		0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=800mA, I_B=80mA$		1.2	V
Transition frequency	$f_T$	$V_{CE}=6V, I_C=20mA, f=30MHz$	150		MHz

\* Pulse Test : pulse width 300 $\mu s$  , duty cycle 2%.

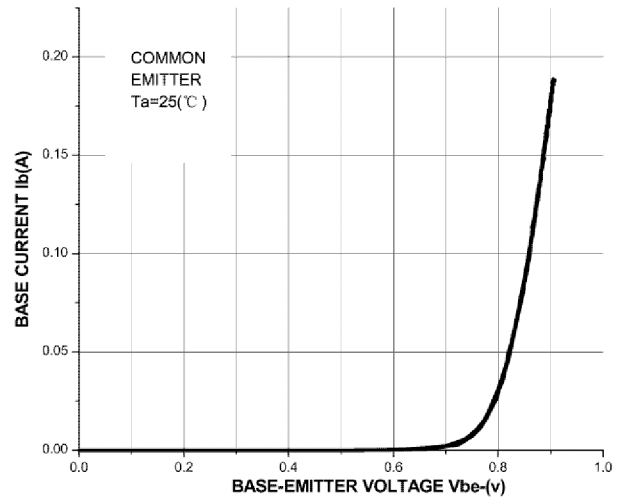
# Typical Characteristics

M8050

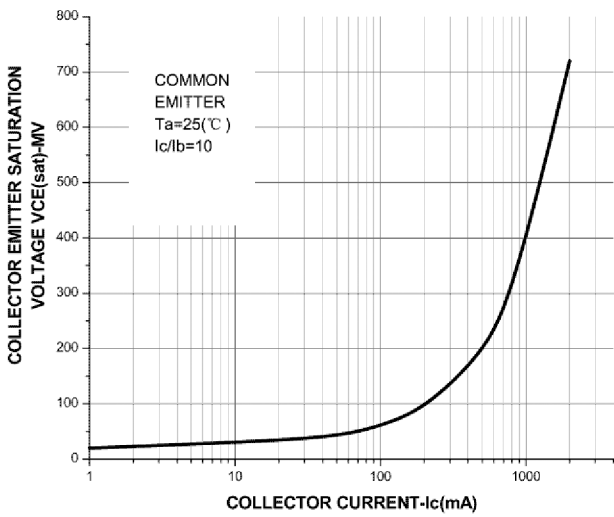
Ic-Vce



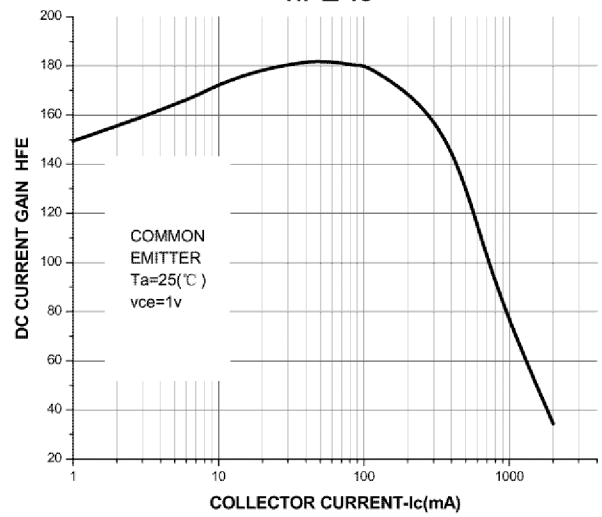
Ib-Vbe



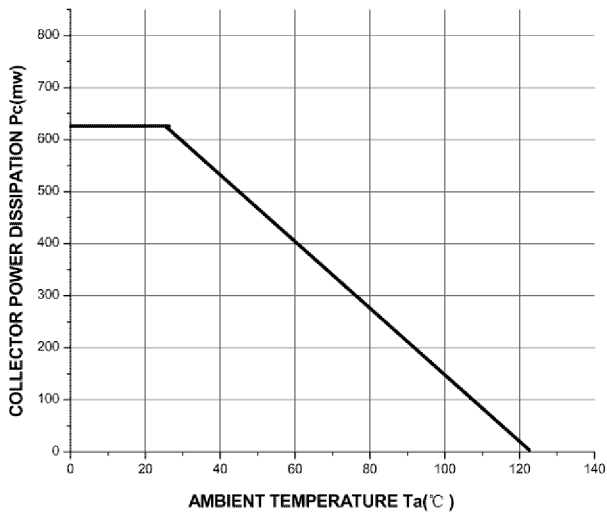
Vcesat-Ic



hFE-Ic



Pc-Ta



## TO-92 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Ö		1.600		0.063
↓	0.000	0.380	0.000	0.015