



## SOT-23 Plastic-Encapsulate Transistors

### S8050LT1 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$P_{CM}$ : 0.3 W ( $T_{amb}=25^{\circ}C$ )

Collector current

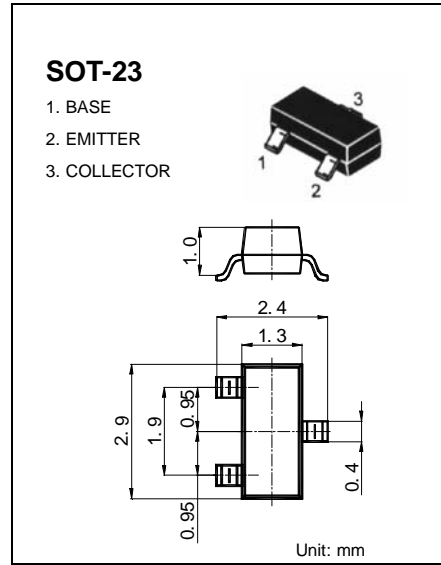
$I_{CM}$ : 0.5 A

Collector-base voltage

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

Operating and storage junction temperature range

$T_J, T_{stg}$ :  $-55^{\circ}C$  to  $+150^{\circ}C$



#### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=40V, I_E=0$			0.1	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CB}=20V, I_E=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			0.1	$\mu A$
DC current gain	$H_{FE(1)}$	$V_{CE}=1V, I_C=50mA$	120		350	
	$H_{FE(2)}$	$V_{CE}=1V, I_C=500mA$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$			1.2	V
Transition frequency	$f_T$	$V_{CE}=6V, I_C=20mA$ $f=30MHz$	150			MHz

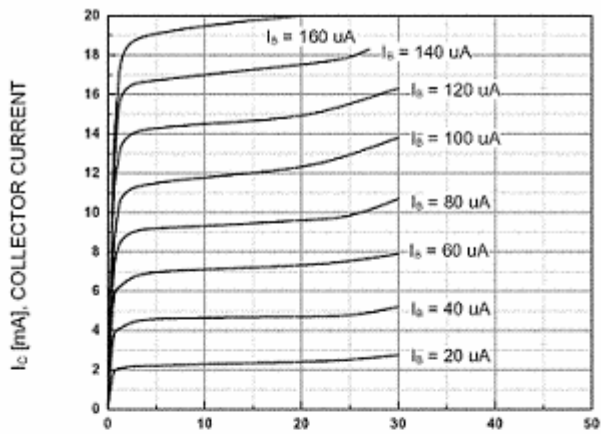
#### CLASSIFICATION OF $h_{FE(1)}$

Rank	L	H
Range	120-200	200-350

DEVICE MARKING	S8050LT1=J3Y
----------------	--------------

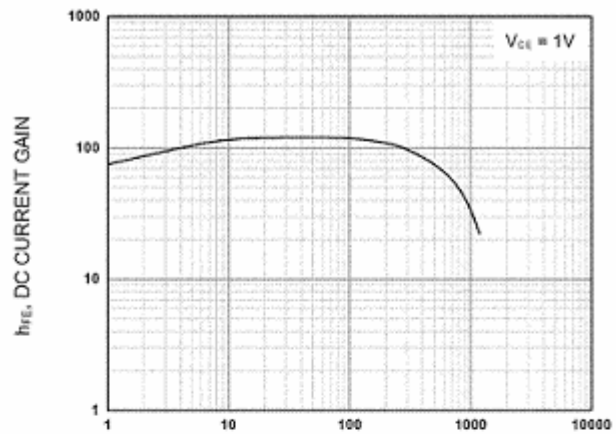
# Typical Characteristics

S8050 L T 1



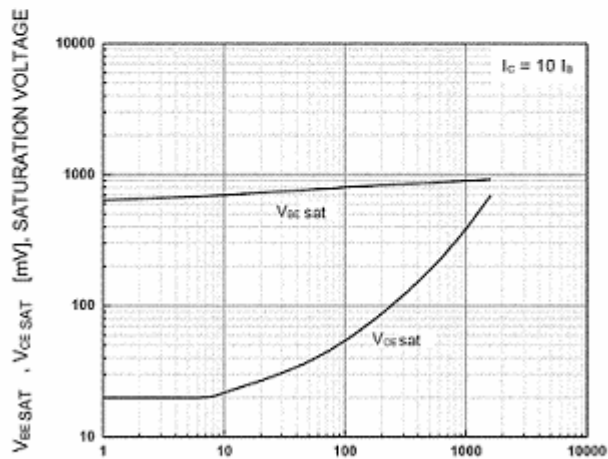
$V_{CE}$  [V], COLLECTOR-EMITTER VOLTAGE

**Static Characteristic**



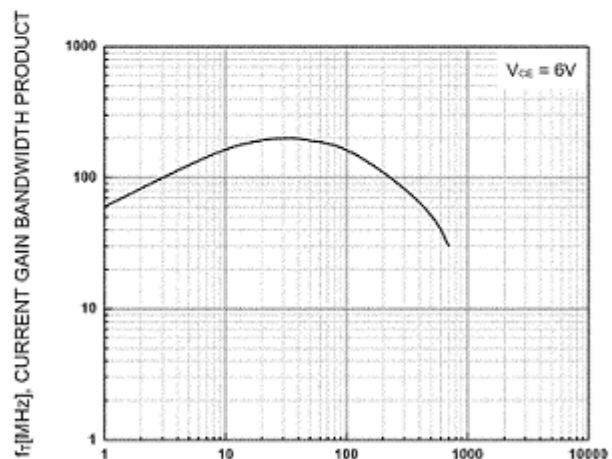
$I_c$  [mA], COLLECTOR CURRENT

**DC current Gain**



$I_c$  [mA], COLLECTOR CURRENT

**Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



$I_c$  [mA], COLLECTOR CURRENT

**Current Gain Bandwidth Product**