

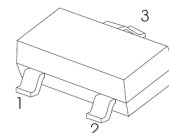
TRANSISTOR (NPN)

SOT-23 Plastic-Encapsulate Transistors

FEATURES

- ◇ Capable of 300mWatts of Power Dissipation
- ◇ Operating and Storage Junction Temperatures: -55°C to 150°C
- ◇ Surface Mount SOT-23 Package
- ◇ RoHS compliant / Green EMC
- ◇ Collector current: $I_C=0.5A$
- ◇ AEC-Q101 qualified (Automotive grade with suffix "Q".)

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

MARKING: J3Y

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	40	V
V_{CE0}	Collector-Emitter Voltage	25	V
V_{EB0}	Emitter-Base Voltage	5	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	°C/W
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS @ 25° C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Max	Units
V_{CE0}	Collector-emitter breakdown voltage	$I_C=1mA, I_B=0$	25		V
V_{CB0}	Collector-base breakdown voltage	$I_C=100\mu A, I_E=0$	40		V
V_{EB0}	Emitter-base breakdown voltage	$I_E=100\mu A, I_C=0$	5.0		V
I_{CBO}	Collector cutoff current	$V_{CB}=40V, I_E=0V$		100	nA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V, I_C=0$		100	nA
I_{CEO}	Collector cut-off current	$V_{CE}=20V, I_B=0$		100	nA
h_{FE}	DC current gain	$I_C=50mA, V_{CE}=1V$	120	400	
		$I_C=500mA, V_{CE}=1V$	50		
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=500mA, I_B=50mA$		0.6	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=500mA, I_B=50mA$		1.2	V
f_T	Transition frequency	$I_C=20mA, V_{CE}=6V, f=30MHz$	150		MHZ

CLASSIFICATION OF $h_{FE}(1)$

Rank	L	H
Range	120-200	200-350

Curve Characteristics

Fig. 1 - Static Characteristics

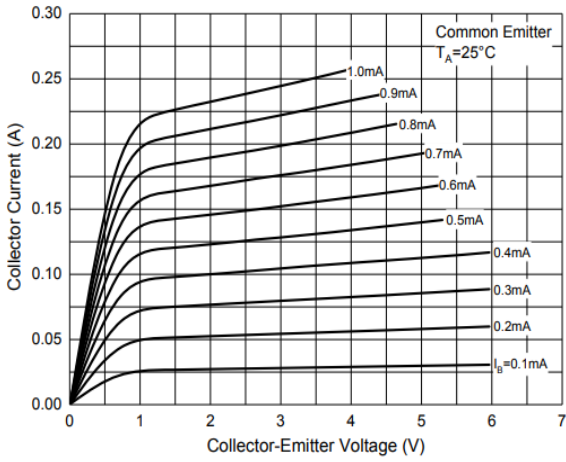


Fig. 2 - DC Current Gain Characteristics

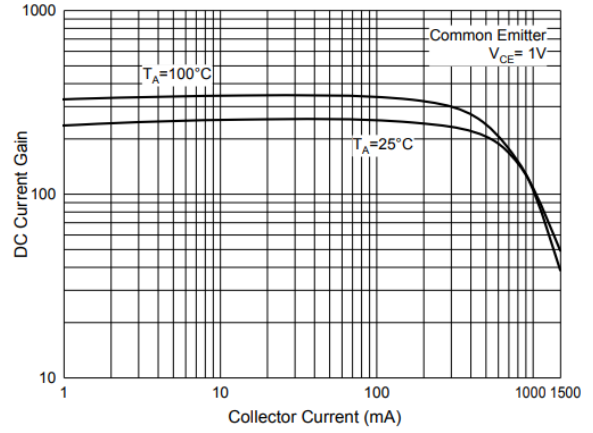


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

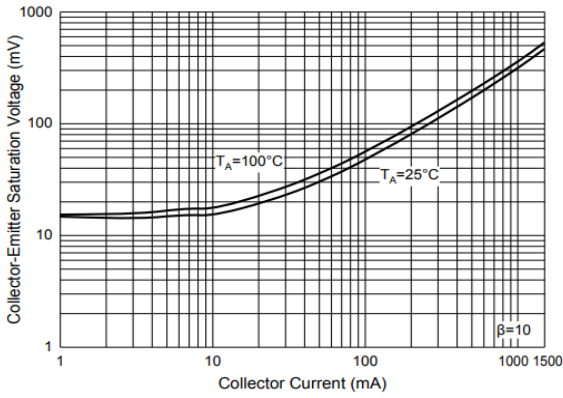


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

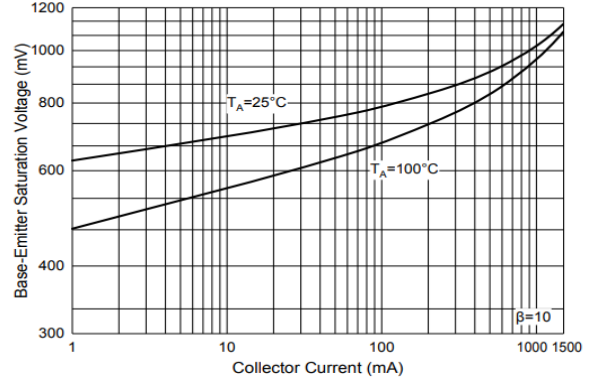


Fig. 5 - Base-Emitter Voltage Characteristics

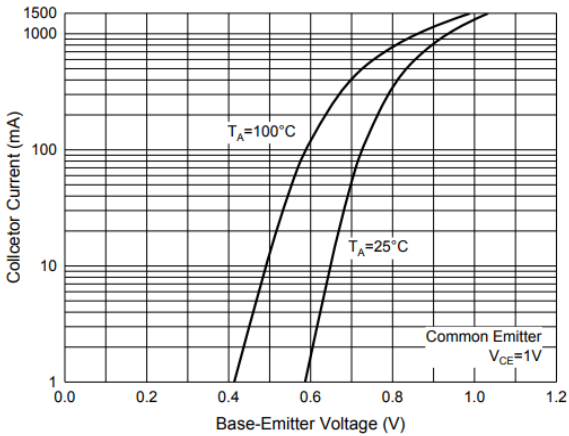
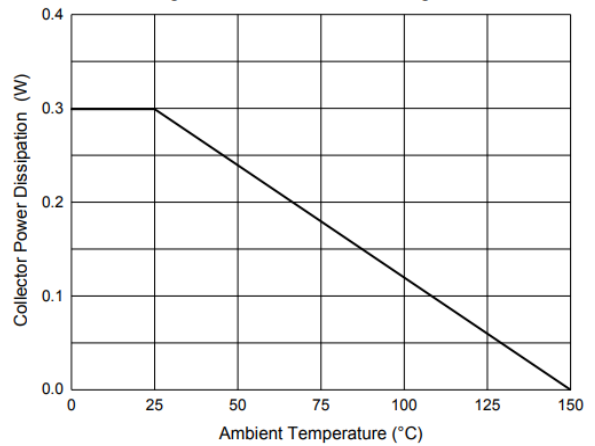


Fig. 6 - Collector Power Derating Curve



ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
S8050	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

Package Outline : SOT23

Symbol	Dimensions in mm	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.890	1.030
E	1.780	2.050
F	0.450	0.600
G	0.013	0.100
H	0.900	1.110
J	0.090	0.180
K	0.370	0.510

SOT23 Package Outline

Note:
 1. Halogen free ,EMC
 2. Pb free solder
 3. Lead thickness solder plating
 4. Lead frame CAC-5
 5. Other Tolerance ± 0.05
 6. Dimensions are exclusive of Burrs Mold Flash and Tie Bar extrusions
 7. Unit :mm