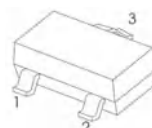


General Description

The transistor is subdivided into three groups Q, R and S according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.

SOT-23



- 1.BASE
- 2.EMITTER
- 3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

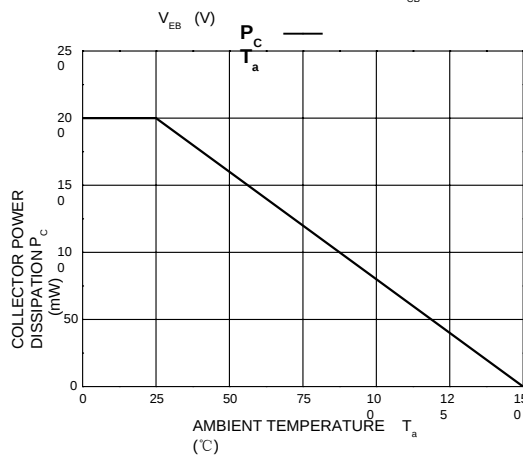
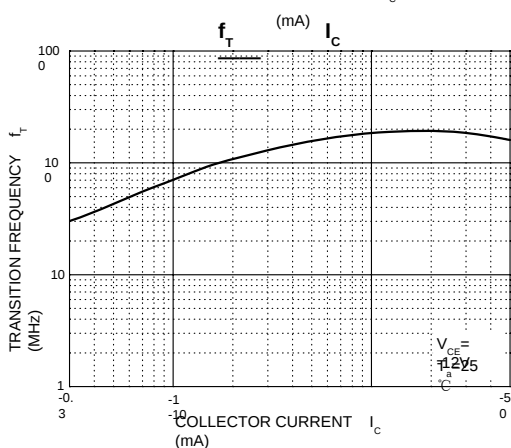
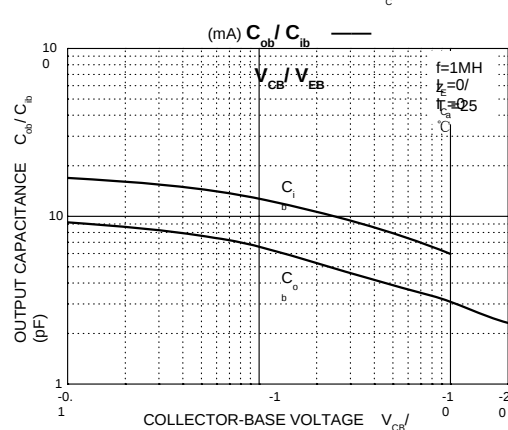
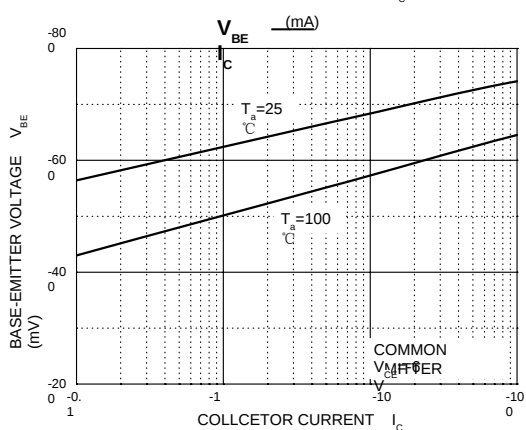
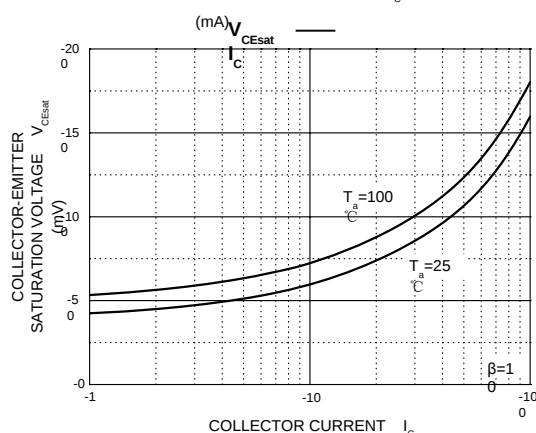
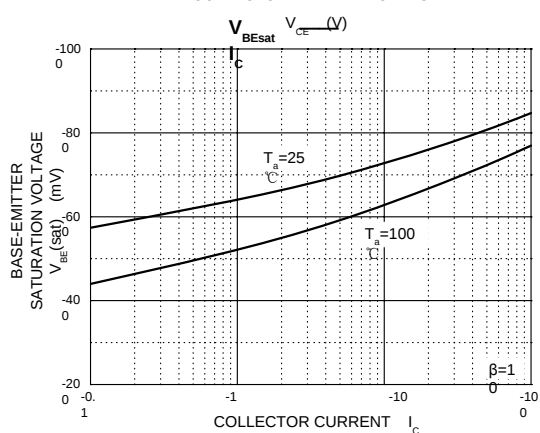
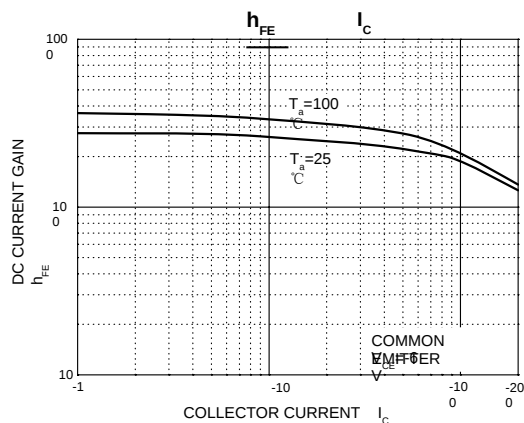
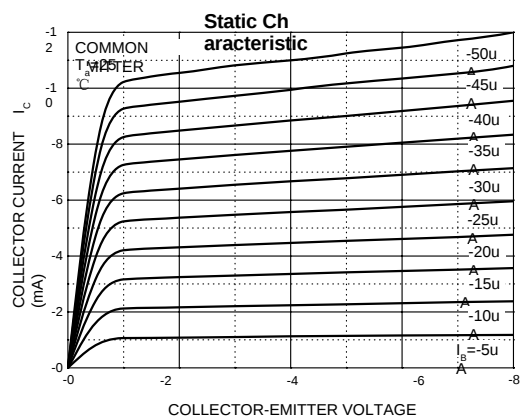
Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	60	V
Collector Current	$-I_C$	150	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_s	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

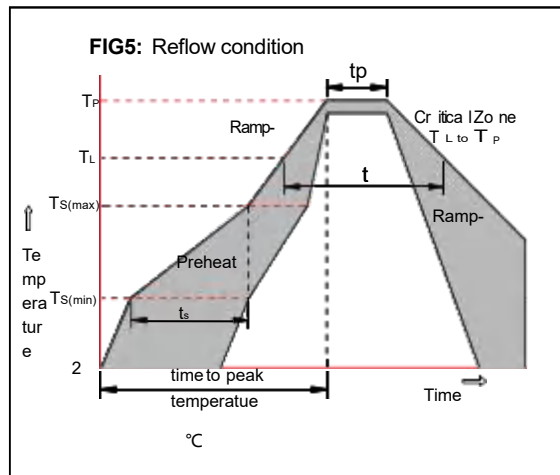
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE}=6V$, $-I_C=1mA$	Q h_{FE} R h_{FE} S h_{FE}	120 180 270	270 390 560	- - -
Collector Cutoff Current at $-V_{CB}=60V$	$-I_{CBO}$	-	0.1	μA
Emitter Cutoff Current at $-V_{EB}=6V$	$-I_{EBO}$	-	0.1	μA
Collector Saturation Voltage at $-I_C=50mA$, $-I_B=5mA$	$-V_{CE(sat)}$	-	0.5	V
Collector Base Breakdown Voltage at $-I_C=50\mu A$	$-V_{(BR)CBO}$	60	-	V
Collector Emitter Breakdown Voltage at $-I_C=1mA$	$-V_{(BR)CEO}$	50	-	V
Emitter Base Breakdown Voltage at $-I_E=50\mu A$	$-V_{(BR)EBO}$	6	-	V
Transition Frequency at $-V_{CE}=12V$, $-I_C=2mA$, $f=30MHz$	f_T	120	-	MHz

RATING AND CHARACTERISTIC CURVES



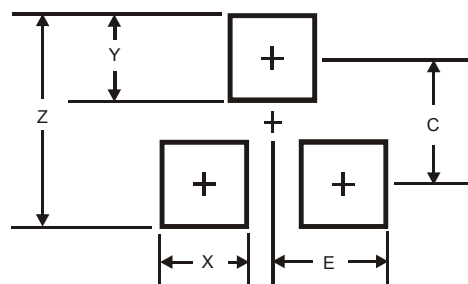
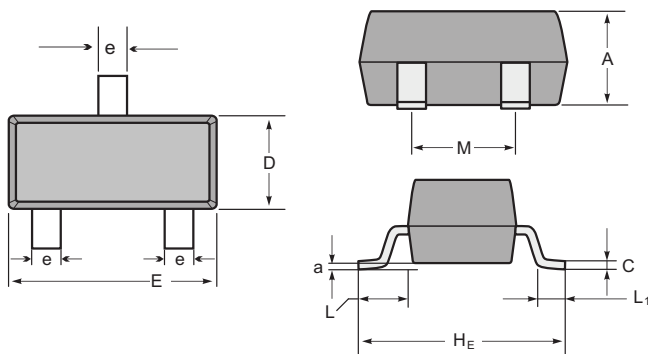
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23



SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.15
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.0
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	6
	min	35	3	47	110	87	12	67			0.0

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape	Symbol	Dimension (mm)
	P0	4.00±0.10
	P1	4.00±0.10
	P2	2.00±0.10
	D0	1.55±0.10
	D1	1.05±0.10
	E	1.55±0.10
	F	3.60±0.10
	W	8.00±0.10
	A0	3.80±0.20
	B0	3.25±0.20
	K0	1.45±0.10
	T	0.25±0.05
	D2	178.0±3.0
	D3	55Min.
7" Reel	D4	R24.0±3.0
	G	R82.0±3.0
	I	13.0±2.0
	W1	11.0±3.0
	Quantity: 3000PCS	

