



## FEATURES

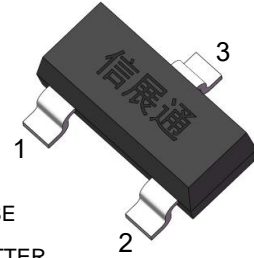
- Complementary to MMBT5401
- Ideal for Medium Power Amplification and Switching

Marking: G1

MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{\text{CBO}}$	Collector-Base Voltage	180	V
$V_{\text{CEO}}$	Collector-Emitter Voltage	160	V
$V_{\text{EBO}}$	Emitter-Base Voltage	6	V
$I_{\text{C}}$	Collector Current	600	mA
$P_{\text{C}}$	Collector Power Dissipation	300	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	416	$^\circ\text{C}/\text{W}$
$T_{\text{J}}, T_{\text{stg}}$	Operation Junction and Storage Temperature Range	-55~+150	$^\circ\text{C}$

## SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless otherwise specified)

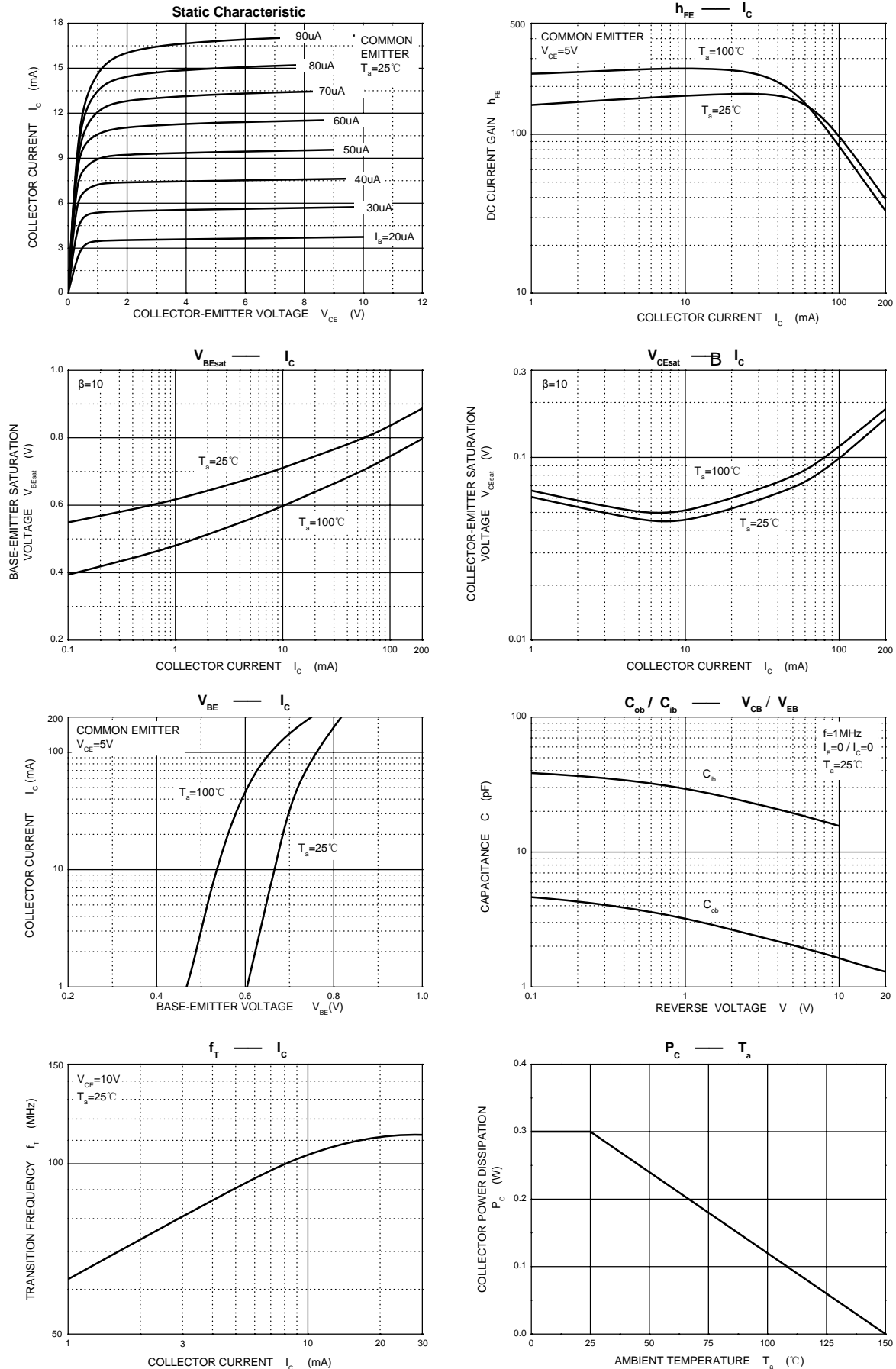
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=100\mu\text{A}, I_{\text{E}}=0$	180			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}^*$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	160			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}, I_{\text{C}}=0$	6			V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}}=120\text{V}, I_{\text{E}}=0$			50	nA
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}}=4\text{V}, I_{\text{C}}=0$			50	nA
DC current gain	$h_{\text{FE}(1)}^*$	$V_{\text{CE}}=5\text{V}, I_{\text{C}}=1\text{mA}$	80			
	$h_{\text{FE}(2)}^*$	$V_{\text{CE}}=5\text{V}, I_{\text{C}}=10\text{mA}$	100		300	
	$h_{\text{FE}(3)}^*$	$V_{\text{CE}}=5\text{V}, I_{\text{C}}=50\text{mA}$	50			
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})1}^*$	$I_{\text{C}}=10\text{mA}, I_{\text{B}}=1\text{mA}$			0.15	V
	$V_{\text{CE}(\text{sat})2}^*$	$I_{\text{C}}=50\text{mA}, I_{\text{B}}=5\text{mA}$			0.2	V
Base-emitter saturation voltage	$V_{\text{BE}(\text{sat})1}^*$	$I_{\text{C}}=10\text{mA}, I_{\text{B}}=1\text{mA}$			1	V
	$V_{\text{BE}(\text{sat})2}^*$	$I_{\text{C}}=50\text{mA}, I_{\text{B}}=5\text{mA}$			1	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=10\text{mA}, f=100\text{MHz}$	100		300	MHz
Collector output capacitance	$C_{\text{ob}}$	$V_{\text{CB}}=10\text{V}, I_{\text{E}}=0, f=1\text{MHz}$			6	pF

\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .CLASSIFICATION OF  $h_{\text{FE}(1)}$ 

RANK	L	H
RANGE	100-200	200-300

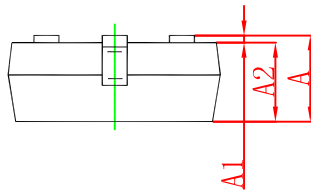
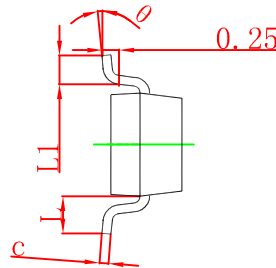
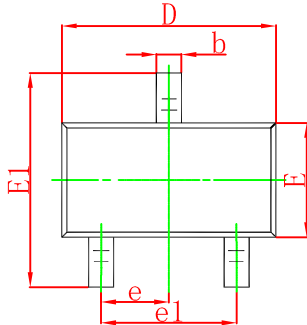


Typical Characteristics



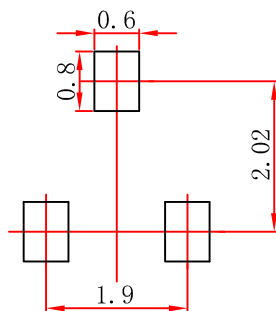


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05mm.
3. The pad layout is for reference purposes only.