

Description

Silicon NPN transistor in a SOT-23 Plastic Package

Applications

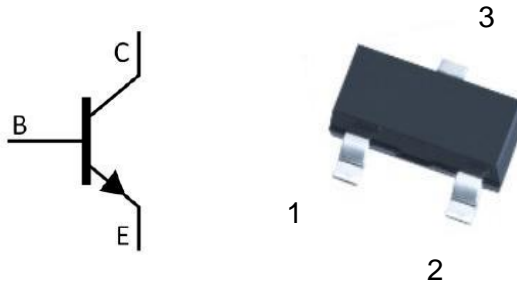
General purpose high voltage amplifier

Features

- High voltage
- Complementary pair with MMBT5401
- Halogen-free Product

Symbol	Parameter	Max	Unit
V_{CE0}	collector-emitter voltage	160	V
I_C	collector current (DC)	600	mA

Equivalent Circuit & Pinning



PIN1: Base

PIN 2: Emitter

PIN 3: Collector

hFE Classifications & Marking

h _{FE} Classifications Symbol	A	B	C
h _{FE} Range	50~150	100~300	200~400
Marking	HG1A	HG1B	HG1C

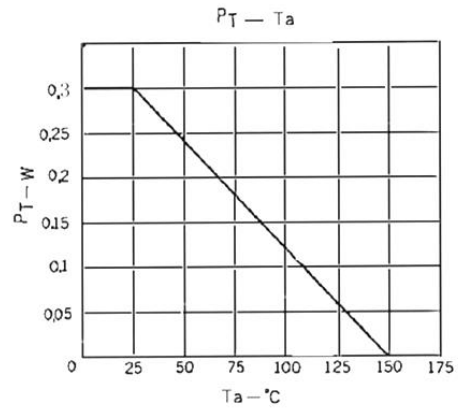
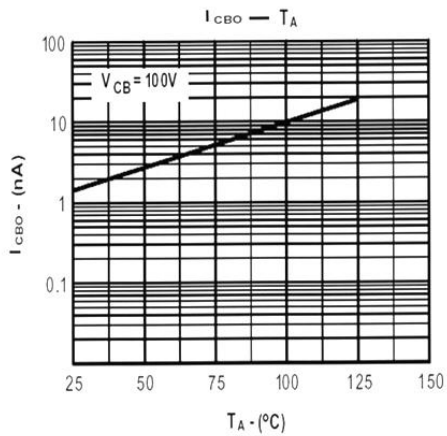
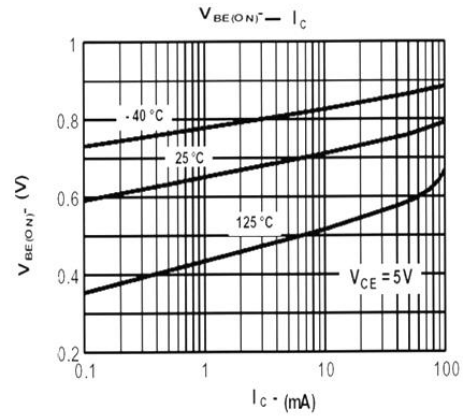
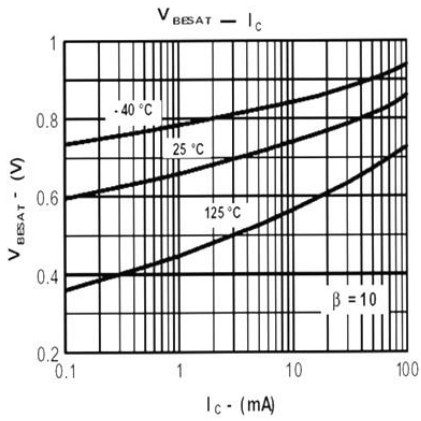
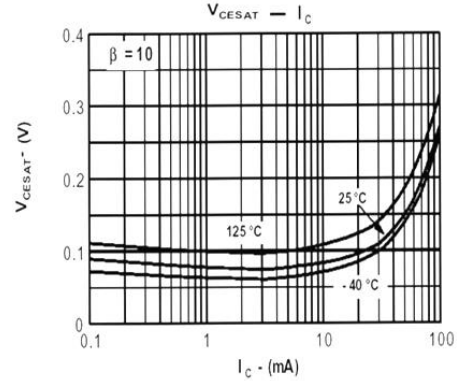
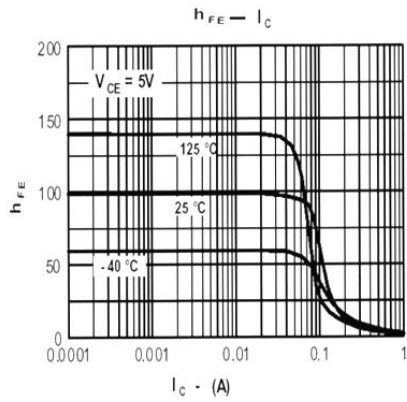
Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	180	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Base Current	I_B	300	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

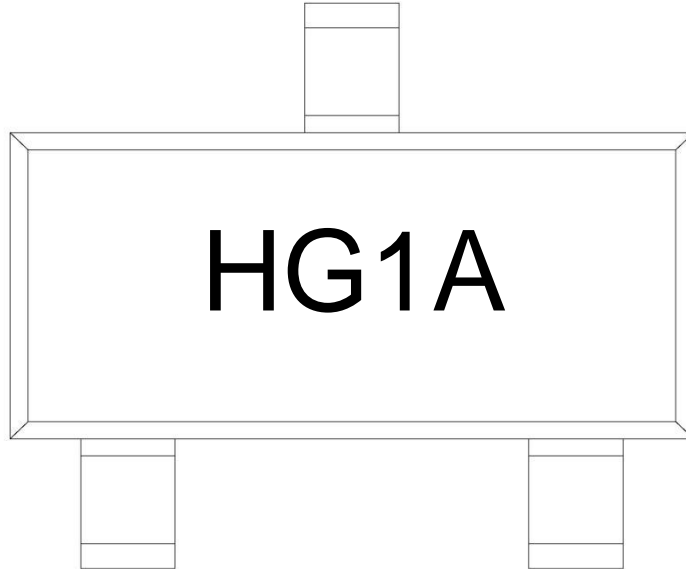
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=180V$ $I_E=0$			0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=6.0V$ $I_C=0$			0.1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V$ $I_C=10mA$	50	200	400	
	$h_{FE(2)}$	$V_{CE}=5.0V$ $I_C=50mA$	20	160		
	$h_{FE(3)}$	$V_{CE}=5.0V$ $I_C=1.0mA$	40	190		
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=10mA$ $I_B=1.0mA$		0.06	0.15	V
	$V_{CE(sat)(2)}$	$I_C=50mA$ $I_B=5.0mA$		0.09	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)(1)}$	$I_C=10mA$ $I_B=1.0mA$		0.7	1.0	V
	$V_{BE(sat)(2)}$	$I_C=50mA$ $I_B=5.0mA$		0.8	1.0	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=5.0V$ $I_C=10mA$		0.68	0.75	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=10mA$	50	110		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		2.2	5.0	pF
Turn-on Time	t_{on}	$I_C=100mA$ $I_{B1}=-I_{B2}=10mA$		0.3		μs
Turn-off Time	t_{off}			0.4		μs
Storage Time	t_{stg}			0.2		μs

Electrical Characteristic Curve



Marking Instructions



Note:

- H: Company Code
- G1: Product Type Code
- A: h_{FE} Classifications Symbol Code

h_{FE} Classifications Symbol	A	B	C
h_{FE} Range	50~150	100~300	200~400
Marking	HG1A	HG1B	HG1C

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Packaging SPEC.

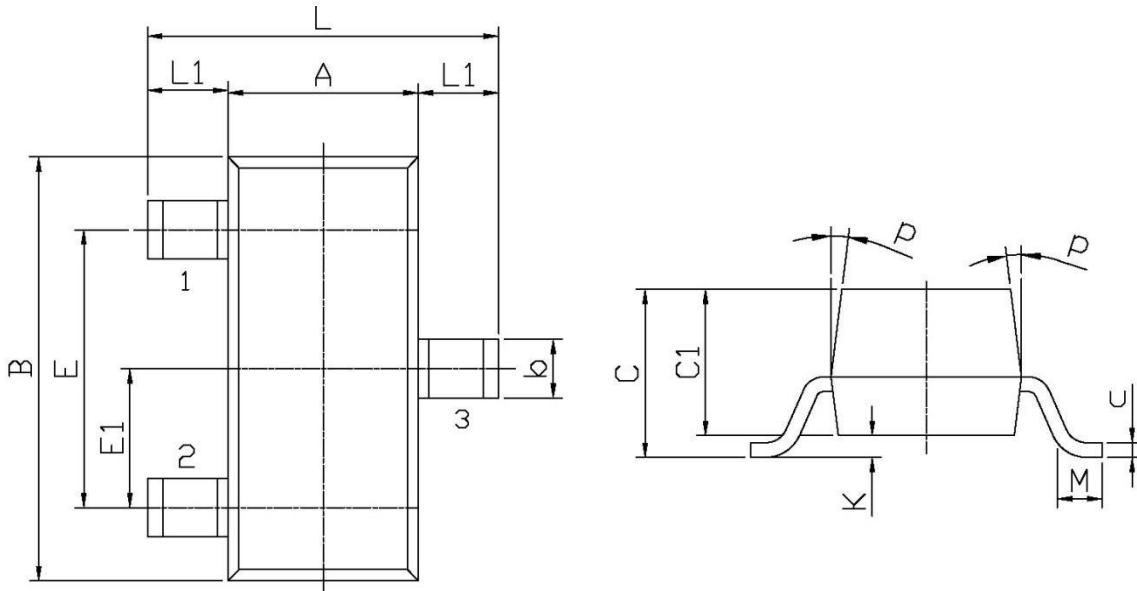
REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7" x8	180x120x180	390x385x205

Package Outline Dimensions

SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			