

**Description**

Silicon NPN transistor in a SOT-23 Plastic Package

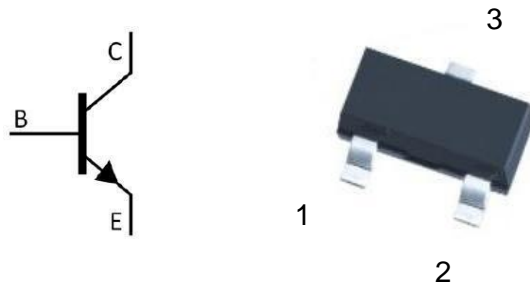
**Applications**

High voltage control circuit

**Features**

- High voltage
- Low saturation voltage
- low collector capacitance output
- Complementary pair with MMBTA92
- Halogen-free product

Symbol	Parameter	Max	Unit
$V_{CE0}$	collector-emitter voltage	300	V
$I_c$	collector current (DC)	500	mA

**Equivalent Circuit & Pinning**


PIN1: Base

PIN 2: Emitter

PIN 3: Collector

**hFE Classifications & Marking**

h <sub>FE</sub> Range	>40
Marking	H1D

**Absolute Maximum Ratings(Ta=25°C)**

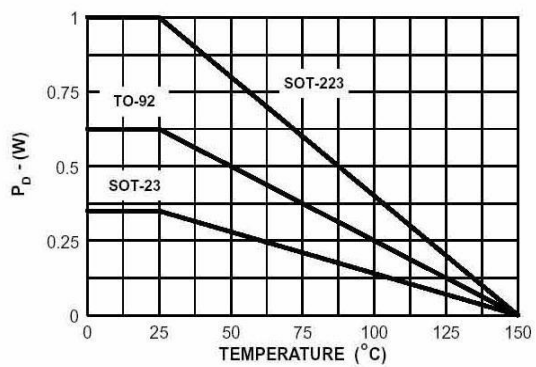
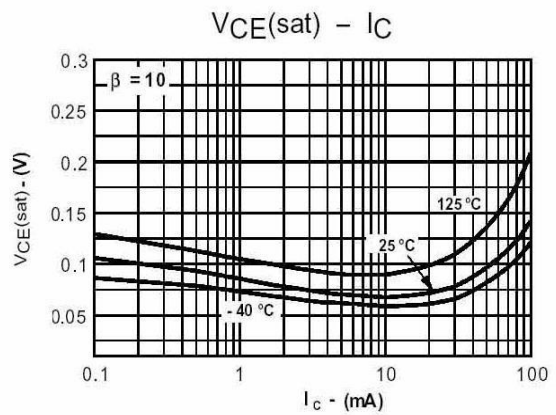
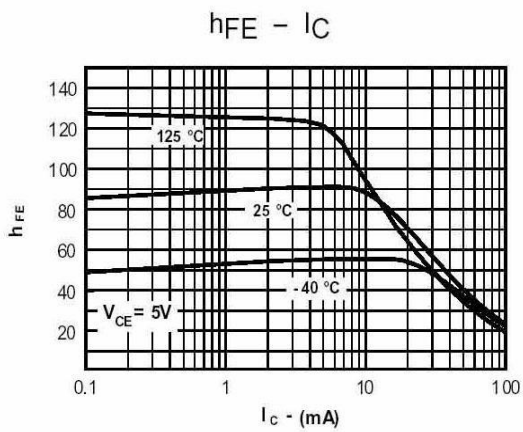
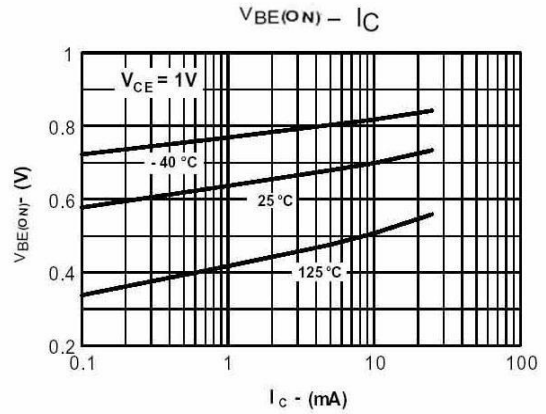
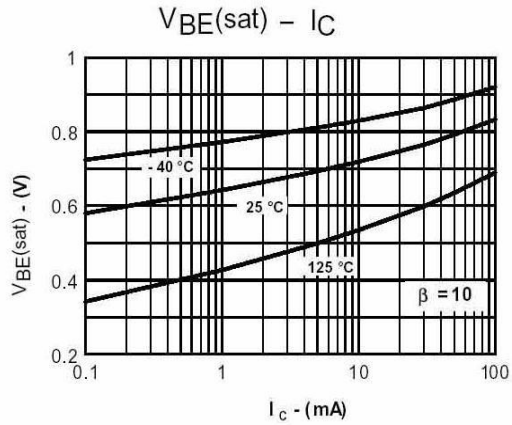
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V <sub>CB0</sub>	300	V
Collector to Emitter Voltage	V <sub>CEO</sub>	300	V
Emitter to Base Voltage	V <sub>EBO</sub>	6.0	V
Collector Current	I <sub>C</sub>	500	mA
Collector Power Dissipation*	*P <sub>C</sub>	350	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ 150	°C

 Device mounted on FR-4 PCB 4.0\*4.0\*0.15mm<sup>3</sup>
**Electrical Characteristics(Ta=25°C)**

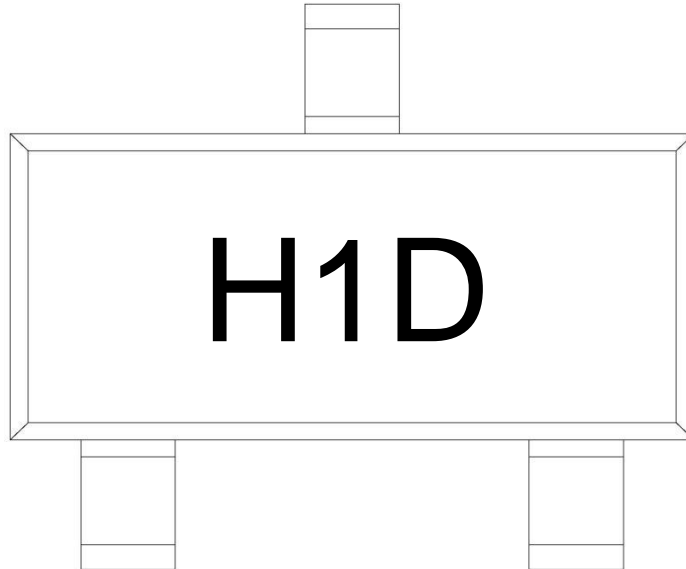
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V <sub>CB0</sub>	I <sub>C</sub> =100μA I <sub>E</sub> =0	300			V
Collector to Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =1.0mA I <sub>B</sub> =0	300			V
Emitter to Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =100μA I <sub>C</sub> =0	6.0			V
Collector Cut-Off Current	I <sub>CB0</sub>	V <sub>CB</sub> =200V I <sub>E</sub> =0			0.1	μA
Emitter Base Cut-Off Current	I <sub>EBO</sub>	V <sub>BE</sub> =6.0V I <sub>C</sub> =0			0.1	μA
DC Current Gain	*h <sub>FE(1)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =10mA	40			
	*h <sub>FE(2)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =30mA	40			
	*h <sub>FE(3)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =1.0mA	25			
Collector to Emitter Saturation Voltage	*V <sub>CE(sat)</sub>	I <sub>C</sub> =20mA I <sub>B</sub> =2.0mA			0.5	V
Base to Emitter Saturation Voltage	*V <sub>BE(sat)</sub>	I <sub>C</sub> =20mA I <sub>B</sub> =2.0mA			0.9	V
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> =10mA V <sub>CE</sub> =20V f=100MHz	50			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =20V I <sub>E</sub> =0 f=1.0MHz			3.0	pF

pulse test: pulse width≤300μS,duty cycle≤2.0%.

Electrical Characteristic Curve



Marking Instructions



Note:

H: Company Code.

1D: Product Type Code.

Packaging SPEC.

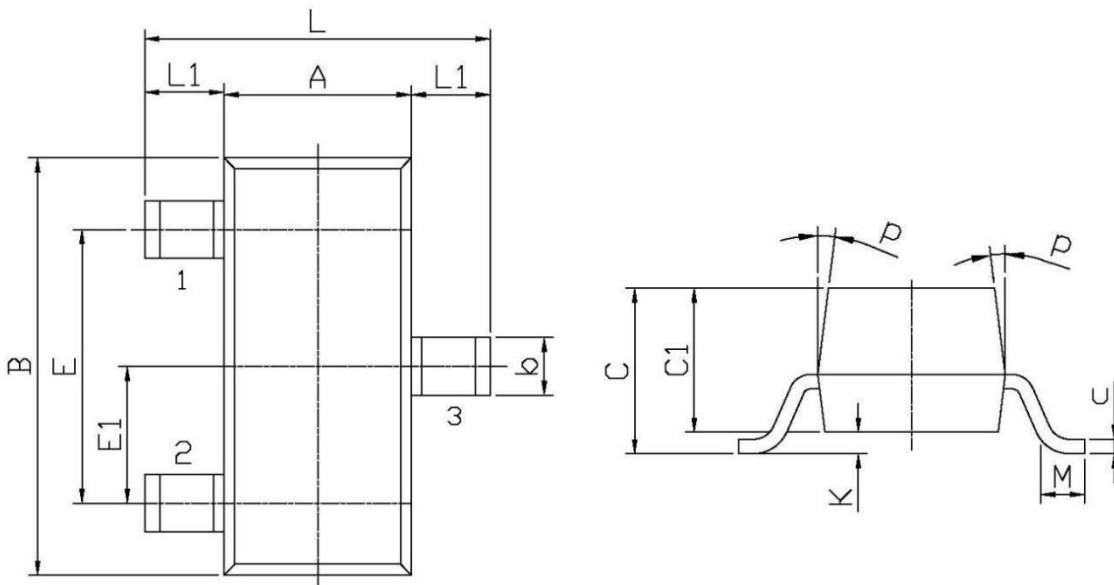
REEL INFORMATION

Package Type	Units					Dimension (unit: mm <sup>3</sup> )		
	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			