

### Description

Silicon NPN transistor in a SOT-23 Plastic Package

### Applications

High voltage control circuit

### Features

- High voltage
- Low saturation voltage
- Halogen-free product

Symbol	Parameter	Max	Unit
$V_{CE0}$	collector-emitter voltage	400	V
$I_C$	collector current (DC)	300	mA

### Equivalent Circuit & Pinning



PIN1: Base

PIN 2: Emitter

PIN 3: Collector

### hFE Classifications & Marking

h <sub>FE</sub> Range	50~200
Marking	H3D

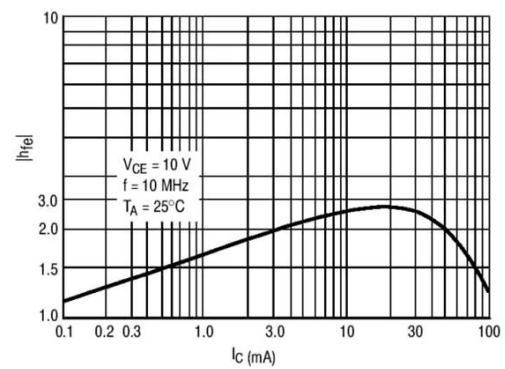
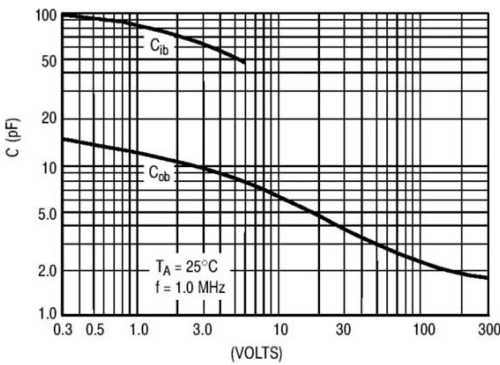
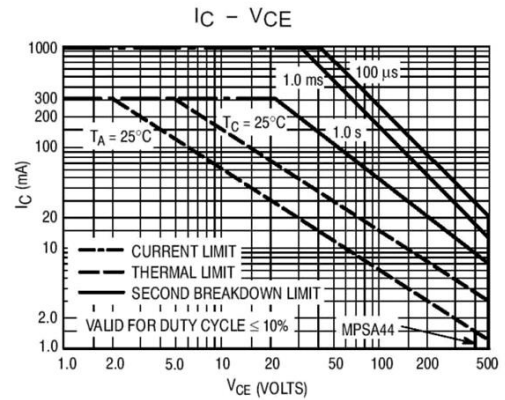
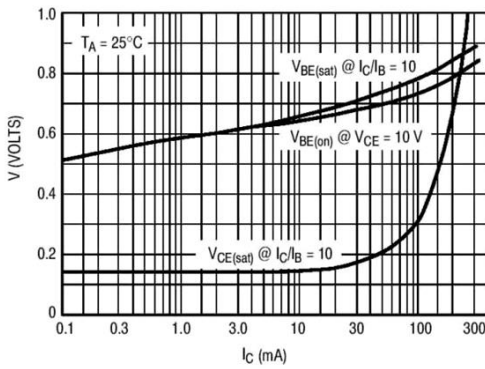
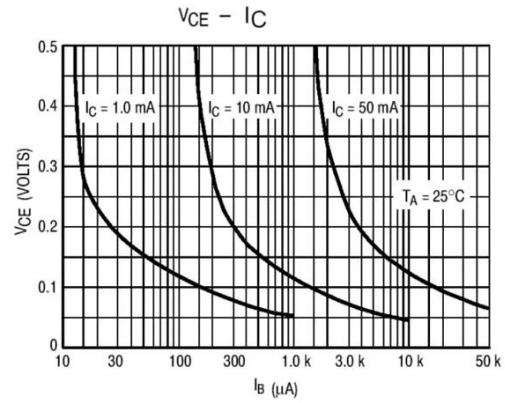
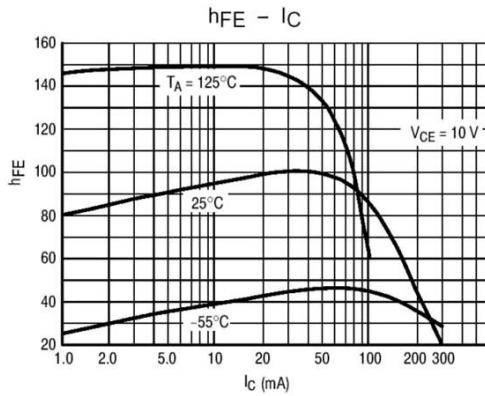
**Absolute Maximum Ratings(Ta=25°C)**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	500	V
Collector to Emitter Voltage	$V_{CEO}$	400	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current	$I_C$	300	mA
Collector Power Dissipation	$P_C$	350	mW
Collector Power Dissipation	$P_{C(TC=25^\circ C)}$	1.5	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

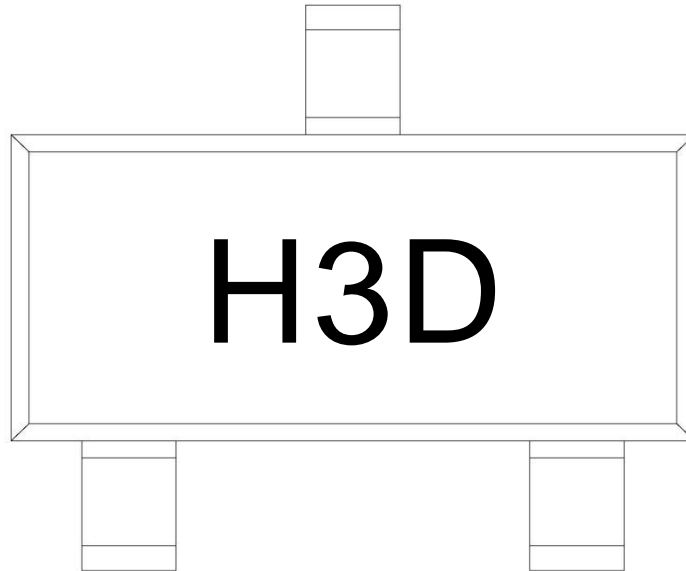
**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=100\mu A$ $I_E=0$	500			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $I_B=0$	400			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu A$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=400V$ $I_E=0$			0.1	$\mu A$
Collector Cut-Off Current	$I_{CES}$	$V_{CE}=400V$ $V_{BE}=0$			1	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{CE}=4.0V$ $I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10V$ $I_C=10mA$	50		200	
	$h_{FE(2)}$	$V_{CE}=10V$ $I_C=100mA$	40			
	$h_{FE(3)}$	$V_{CE}=10V$ $I_C=50mA$	45			
	$h_{FE(4)}$	$V_{CE}=10V$ $I_C=1.0mA$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=1.0mA$ $I_B=0.1mA$			0.4	V
	$V_{CE(sat)(2)}$	$I_C=10mA$ $I_B=1.0mA$			0.5	V
	$V_{CE(sat)(3)}$	$I_C=50mA$ $I_B=5.0mA$			0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			0.75	V
Output Capacitance	$C_{ob}$	$V_{CB}=20V$ $I_E=0$ $f=1.0MHz$			7.0	pF

Electrical Characteristic Curve



Marking Instructions



Note:

H: Company Code.

3D: Product Type Code.

Packaging SPEC.

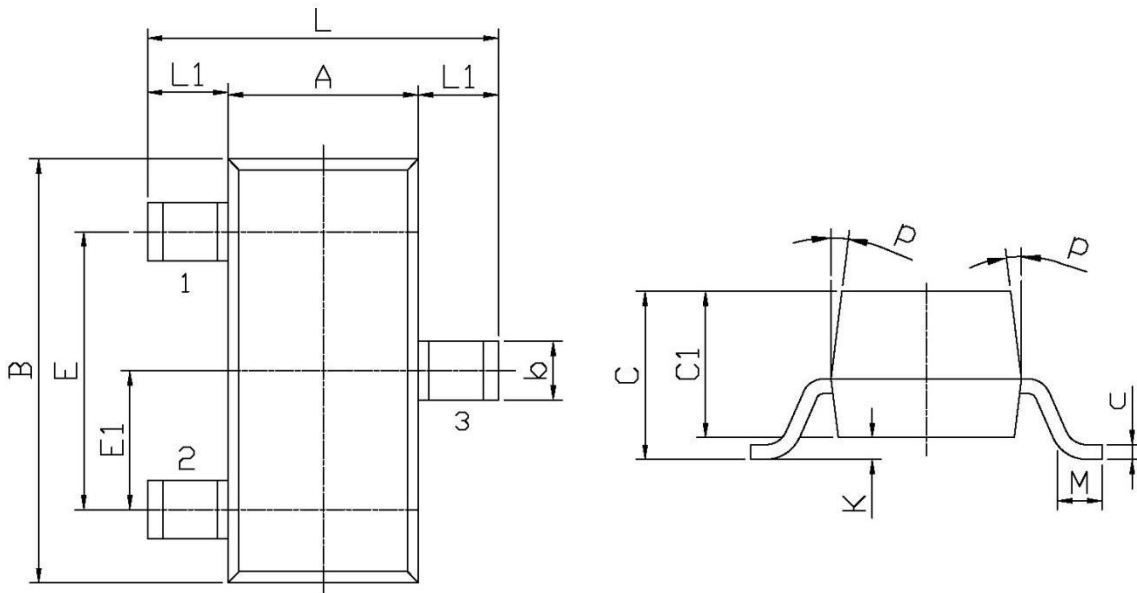
REEL INFORMATION

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	180×120×180	390×385×205

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			