

Description

Silicon NPN transistor in a SOT-89 Plastic Package

Applications

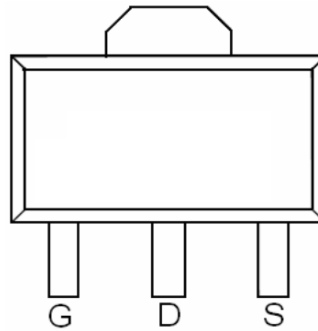
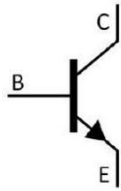
High voltage control circuit.

Features

- High voltage
- Low saturation voltage
- Low collector capacitance output
- Complementary pair with MMBTA92T
- Halogen-free product

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

Equivalent Circuit & Pinning



SOT-89 top view

PIN1: Base

PIN 2: Collector

PIN 3: Emitter

hFE Classifications & Marking

Marking	H1D
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**Absolute Maximum Ratings(Ta=25°C)**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	300	V
Collector to Emitter Voltage	$V_{CEO}$	300	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current - Continuous	$I_C$	500	mA
Collector Power Dissipation*	* $P_C$	350	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

\*:将器件置于4.0\*4.0\*0.15mm<sup>3</sup>的FR-4 PCB板上。

\*:Device mounted on FR-4 PCB 4.0\*4.0\*0.15mm<sup>3</sup>

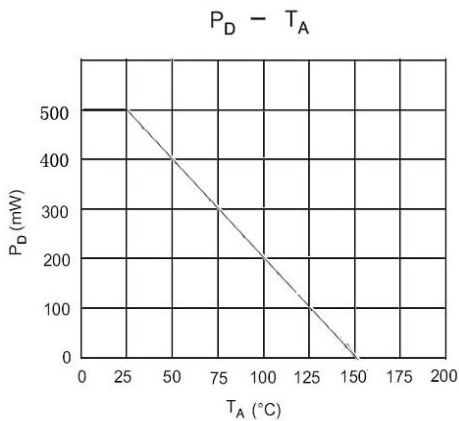
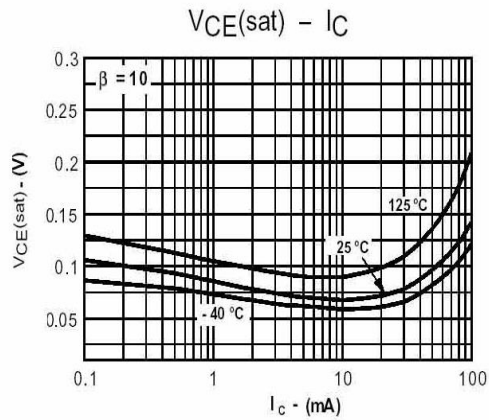
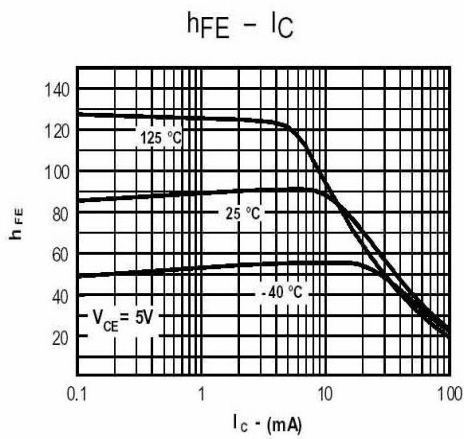
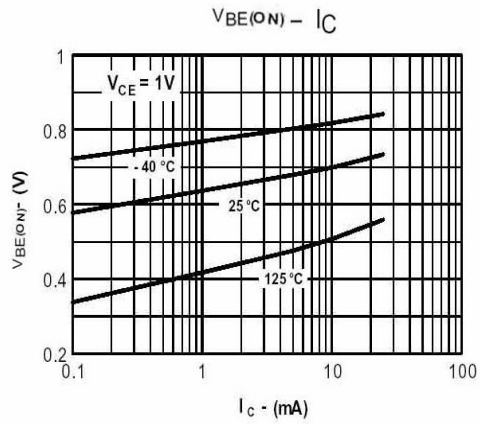
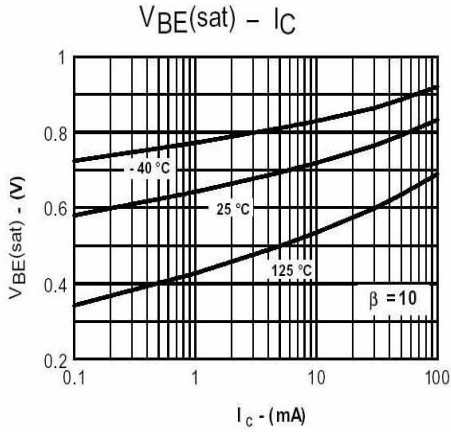
**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=100\mu A$ $I_E=0$	300			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA^*$ $I_B=0$	300			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=100\mu A$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=200V$ $I_E=0$			0.1	$\mu A$
Emitter Base Cut-Off Current	$I_{EBO}$	$V_{BE}=6.0V$ $I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10V$ $I_C=10mA$	40			
	$h_{FE(2)}$	$V_{CE}=10V$ $I_C=30mA^*$	40			
	$h_{FE(3)}$	$V_{CE}=10V$ $I_C=1.0mA$	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20mA$ $I_B=2.0mA$			0.5	V
Emitter to Base Saturation Voltage	$V_{BE(sat)}$	$I_C=20mA$ $I_B=2.0mA$			0.9	V
Current-Gain—Bandwidth Product	$f_T$	$V_{CE}=20V$ $f=100MHz$ $I_C=10mA$	50			MHz
Collector-Base Capacitance	$C_{ob}$	$V_{CB}=20V$ $f=1.0MHz$ $I_E=0$			3.0	pF

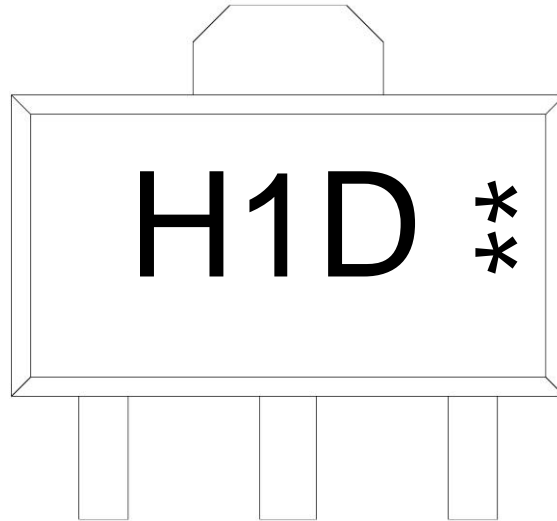
\*脉冲测试: 脉宽 $\leq 300\mu S$ , 占空比 $\leq 2.0\%$ 。

\*pulse test: pulse width $\leq 300\mu S$ , duty cycle $\leq 2.0\%$

Electrical Characteristic Curve



Marking Instructions



Note:

- H: Company Code
- 1D: Product Type
- \*\* : Lot No. Code, code change with Lot No

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-89	1,000	7	7,000	8	56000	7" x12	180x120x180	385x257x392

Package Outline Dimensions

SOT-89

单位: mm

