

**Description**

Silicon NPN transistor in a SOT-89 Plastic Package

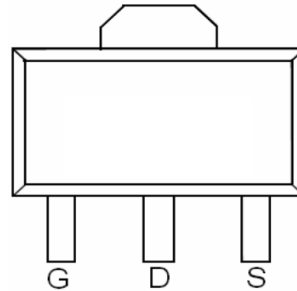
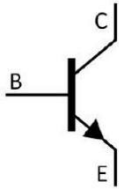
**Applications**

General purpose high voltage amplifier.

**Features**

- High voltage
- complementary pair with MMBT5401T
- Halogen-free product

Symbol	Parameter	Max	Unit
$V_{CEO}$	collector-emitter voltage	160	V
$I_c$	collector current (DC)	600	mA

**Equivalent Circuit & Pinning**


SOT-89 top view

PIN1: Base

PIN 2: Collector

PIN 3: Emitter

**hFE Classifications & Marking**

h <sub>FE</sub> Classifications Symbol	A	B	C
h <sub>FE</sub> Range	50~150	100~300	200~400
Marking	HG1A	HG1B	HG1C

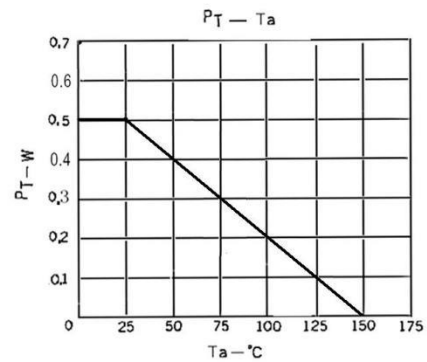
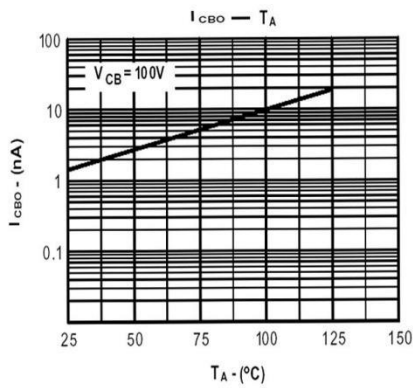
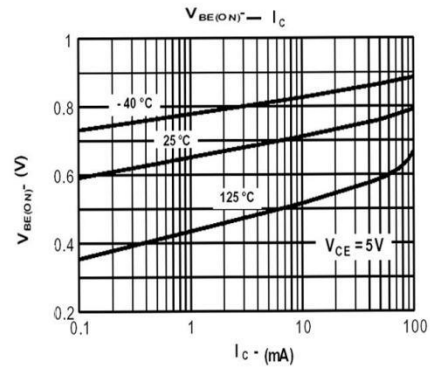
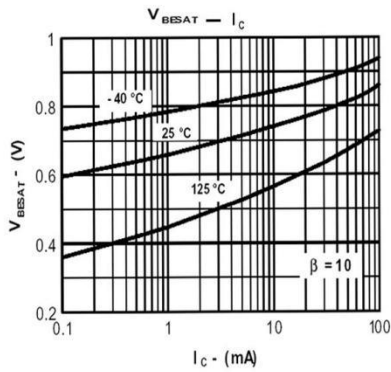
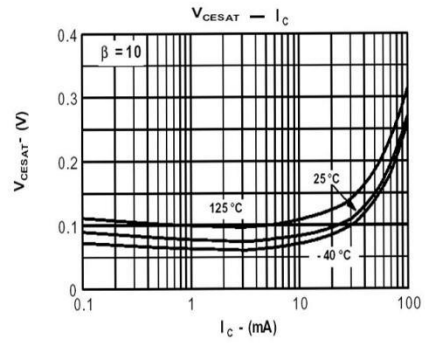
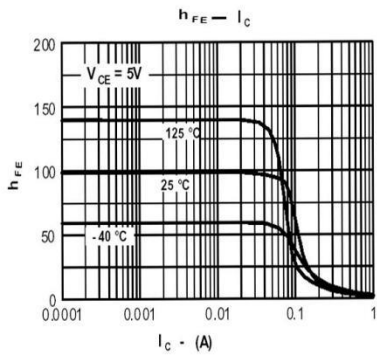
**Absolute Maximum Ratings(Ta=25°C)**

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 - Continuous	$I_C$	600	mA
Collector Base - Continuous	$I_B$	300	mA
Collector Power Dissipation	$P_C$	500	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

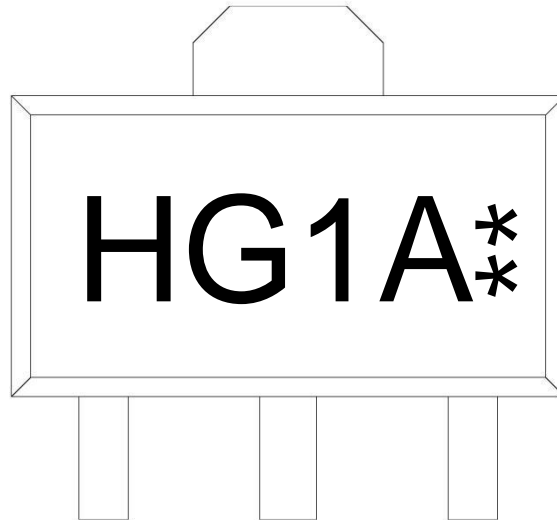
**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=180V$ $I_E=0$			0.1	$\mu A$
Emitter Base Cut-Off Current	$I_{EBO}$	$V_{EB}=6.0V$ $I_C=0$			0.1	$\mu A$
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 to 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
Emitter to Base 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
Emitter to Base 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	$C_{ob}$	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		2.2	5.0	pF
Turn-on Time	$t_{on}$	$I_C=100mA$ $I_{B1}=-I_{B2}=10mA$		0.3		$\mu s$
Turn-off Time	$t_{off}$			0.4		$\mu s$
Storage Time	$t_{stg}$			0.2		$\mu s$

Electrical Characteristic Curve



Marking Instructions



Note:

- H: Company Code
- G1: Product Type
- A:  $h_{FE}$  Classifications Symbol
- \*\* : Lot No. Code, code change with Lot No

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

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

