

**Description**

Silicon NPN transistor in a SOT-89 Plastic Package

**Applications**

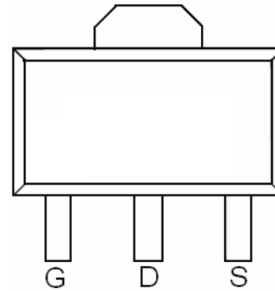
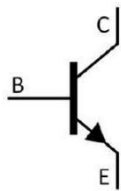
Voltage regulators ,relay drivers lamp drivers, electrical equipment.

**Features**

- Adoption of MBIT processes
- Low collector-to-emitter saturation voltage
- Fast Switching Speed
- Large current capacity and wide ASO
- Complementary to KTB1124
- Halogen-free product

Symbol	Parameter	Max	Unit
$V_{CE0}$	collector-emitter voltage	50	V
$I_c$	collector current (DC)	3.0	A

**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	100~200	140~280	200~400
Marking	YHA	YHB	YHC

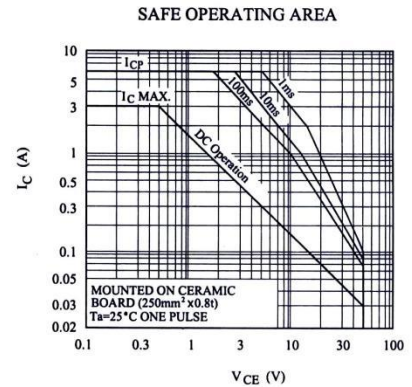
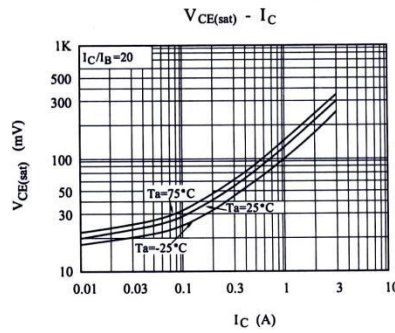
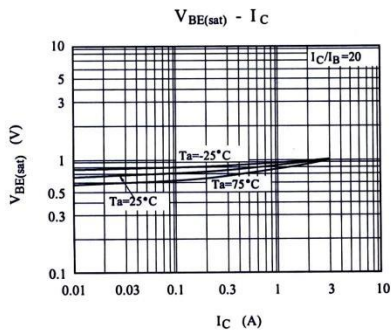
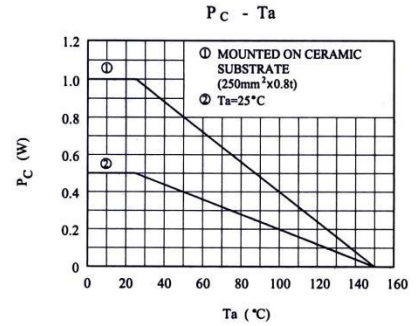
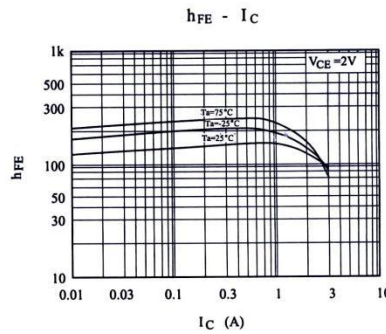
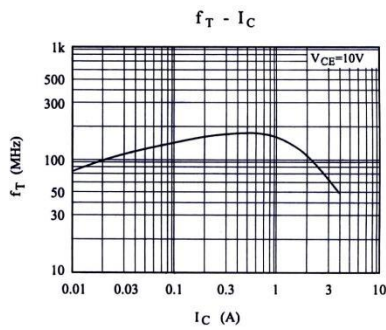
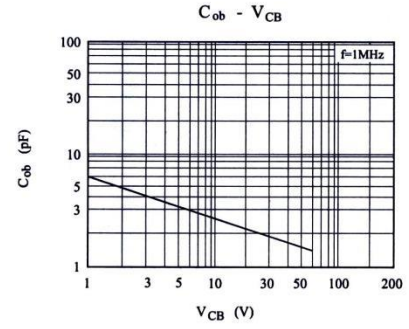
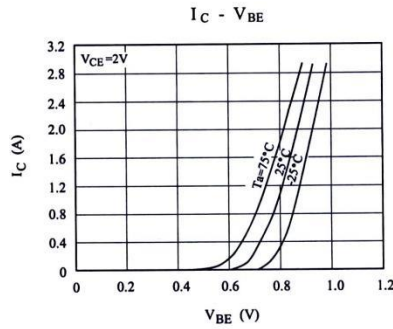
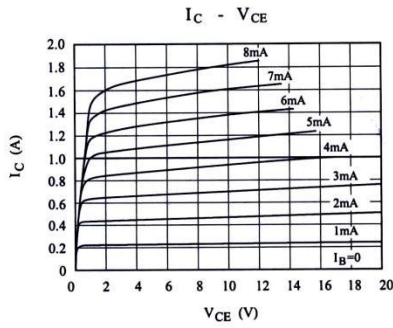
**Absolute Maximum Ratings(Ta=25°C)**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	60	V
Collector to Emitter Voltage	$V_{CEO}$	50	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current - Continuous	$I_C$	3.0	A
Collector Current – Continuous (Pulse)	$I_{CP}$	6.0	A
Collector Power Dissipation	$P_C$	500	mW
Collector Power Dissipation*	* $P_C$	1.0	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

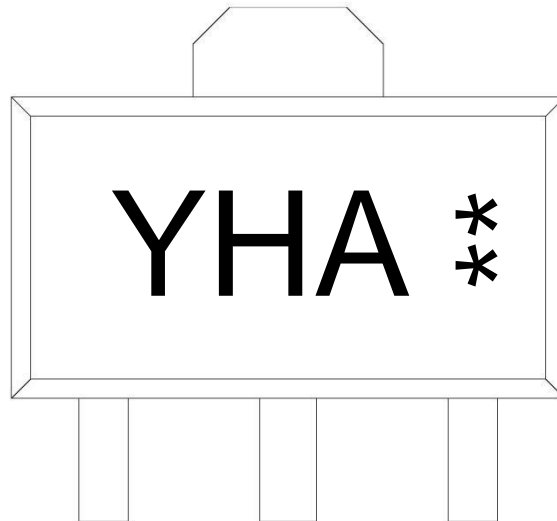
**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=10\mu A$ $I_E=0$	60			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $I_B=0$	50			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu A$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=40V$ $I_E=0$			1.0	$\mu A$
Emitter Base Cut-Off Current	$I_{EBO}$	$V_{EB}=4.0V$ $I_C=0$			1.0	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V$ $I_C=100mA$	100		400	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=3.0A$	35			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.0A$ $I_B=100mA$		0.19	0.5	V
Base to Emitter Voltage	$V_{BE}$	$I_C=2.0A$ $I_B=100mA$		0.94	1.2	V
Transition Frequency	$f_T$	$V_{CE}=10V$ $I_C=50mA$		150		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V$ $I_E=0$ $f=1MHz$		25		pF
Turn-On Time	$t_{on}$	$101_{B1}=-101_{B2}=I_C=1.0A$		70		nS
Storage Time	$t_{stg}$			650		nS
Fall Time	$t_f$			35		nS

Electrical Characteristic Curve



Marking Instructions



Note:

- Y: Company Code
- H: 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	100~200	140~280	200~400
Marking	YHA	YHB	YHC

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	6	42,000	7" x12	180x120x180	390x385x205

Package Outline Dimensions

SOT-89

单位: mm

