

STD03N

March, 2006

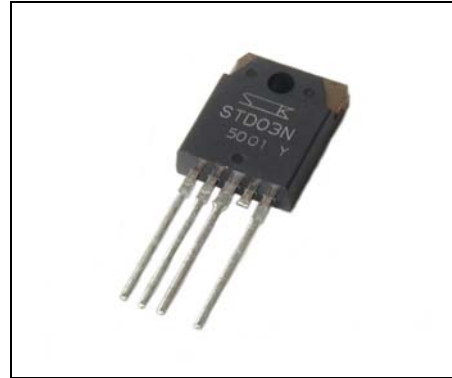
■Features

- High collector power dissipation: $P_c=160W$ (with TO-3P)
- Low internal impedance by means of thinner die structure
- Built-in temperature compensation diode
- Complementary to STD03P

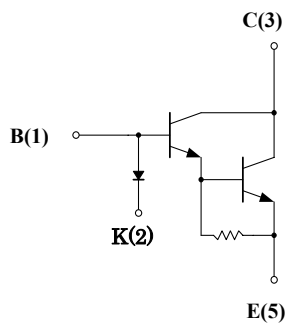
■Applications

- Audio output

■Package--- MT-105 (TO3P 5-pin)



■Equivalent circuit



Absolute maximum ratings

(Ta= 25°C)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	VCBO	160	V
Collector-Emitter Voltage	VCEO	160	V
Emitter-Base Voltage	VEBO	5	V
Collector Current	IC	15	A
Base Current	IB	1	A
Collector Power Dissipation	PC	160 (Tc= 25°C)	W
Diode Forward Current	Di VF	10	mA
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to 150	°C

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Electrical characteristics

(Ta= 25°C)

Parameter	Symbol	Test Conditions	Limits			Unit
			MIN.	TYP.	MAX.	
Collector Cut-off Current	ICBO	VCB=160V			100	μA
Emitter Cut-off Current	IEBO	VEB=5V			100	μA
Collector-Emitter Voltage	VCEO	IC=30mA	160			V
DC Current Transfer Ratio	hFE *	VCE=4V, IC=10A	5000		20000	
Collector-Emitter saturation Voltage	VCE(sat)	IC=10A, IB=10mA			2.0	V
Base-Emitter saturation Voltage	VBE(sat)	IC=10A, IB=10mA			2.5	V
Base-Emitter Voltage	VBE	VCE=20V, IC=40mA		1190		mV
Diode Forward Voltage	Di VF	IF=2.5mA		705		mV

* hFE rank: 5000 to 12000(O), 8000 to 20000(Y)

- ◆ When the transistors are used in pairs, the following conditions must be satisfied: Total VF of Di ≤ Total VBE of the transistors.

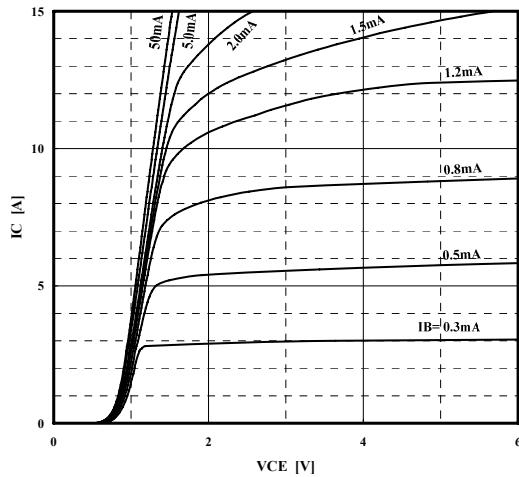
(The above measurement conditions shall be applied and $\Delta V=0$ to 500mV.)

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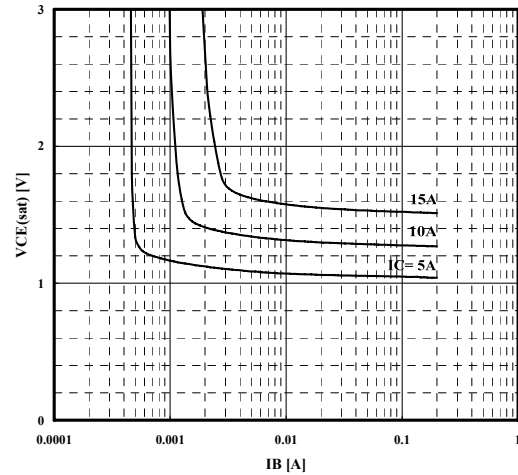
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Typical Performance Characteristics (Tc=25°C)

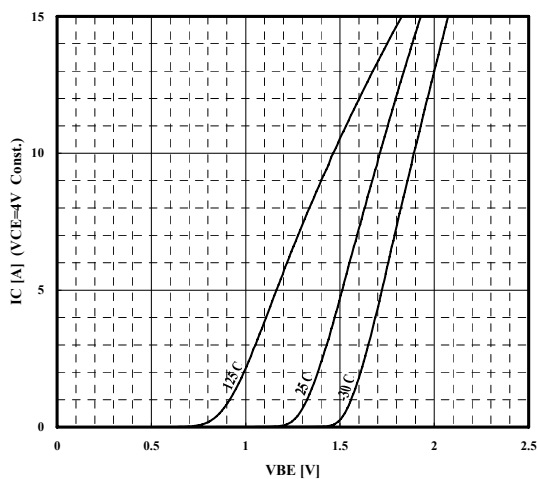
IC-VCE Curve



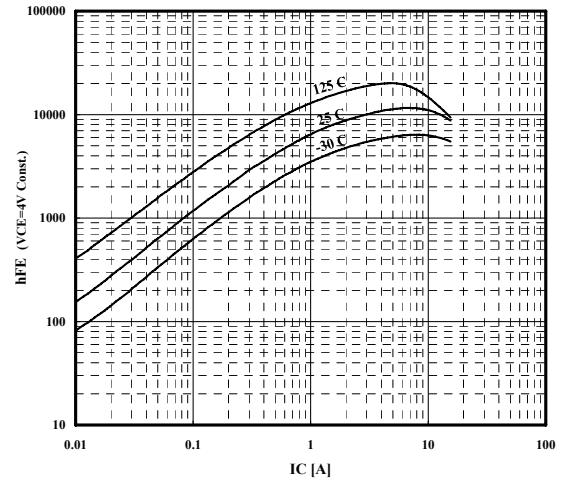
VCE(sat) - IB Curve



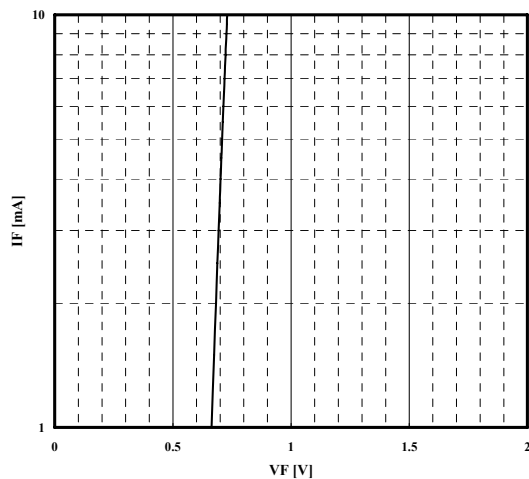
IC - VBE Curve



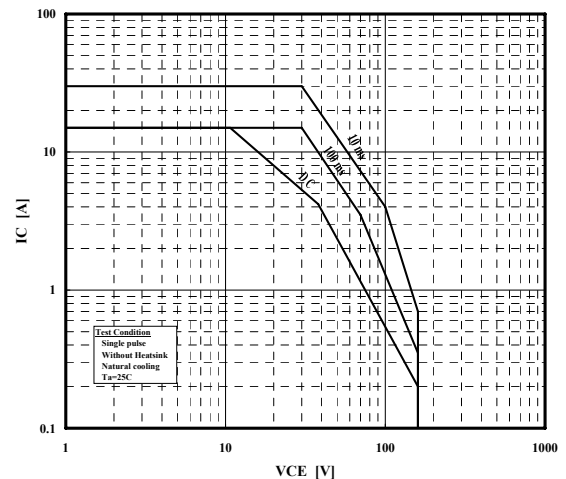
hFE - IC Curve



Di IF-VF



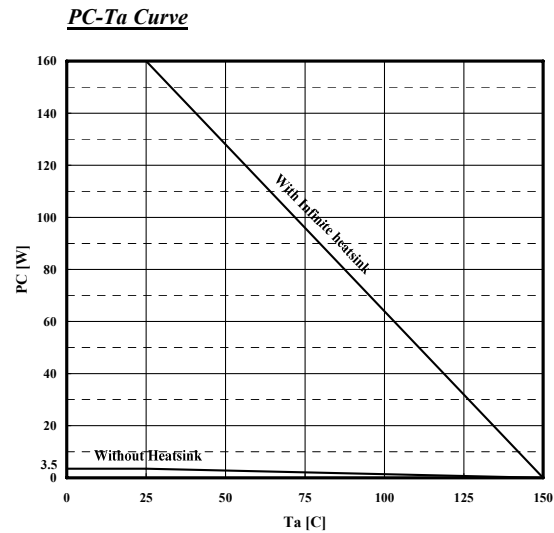
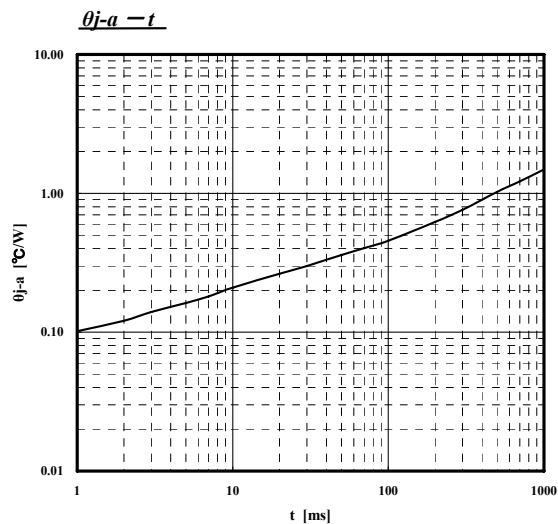
A.S.O. Curve



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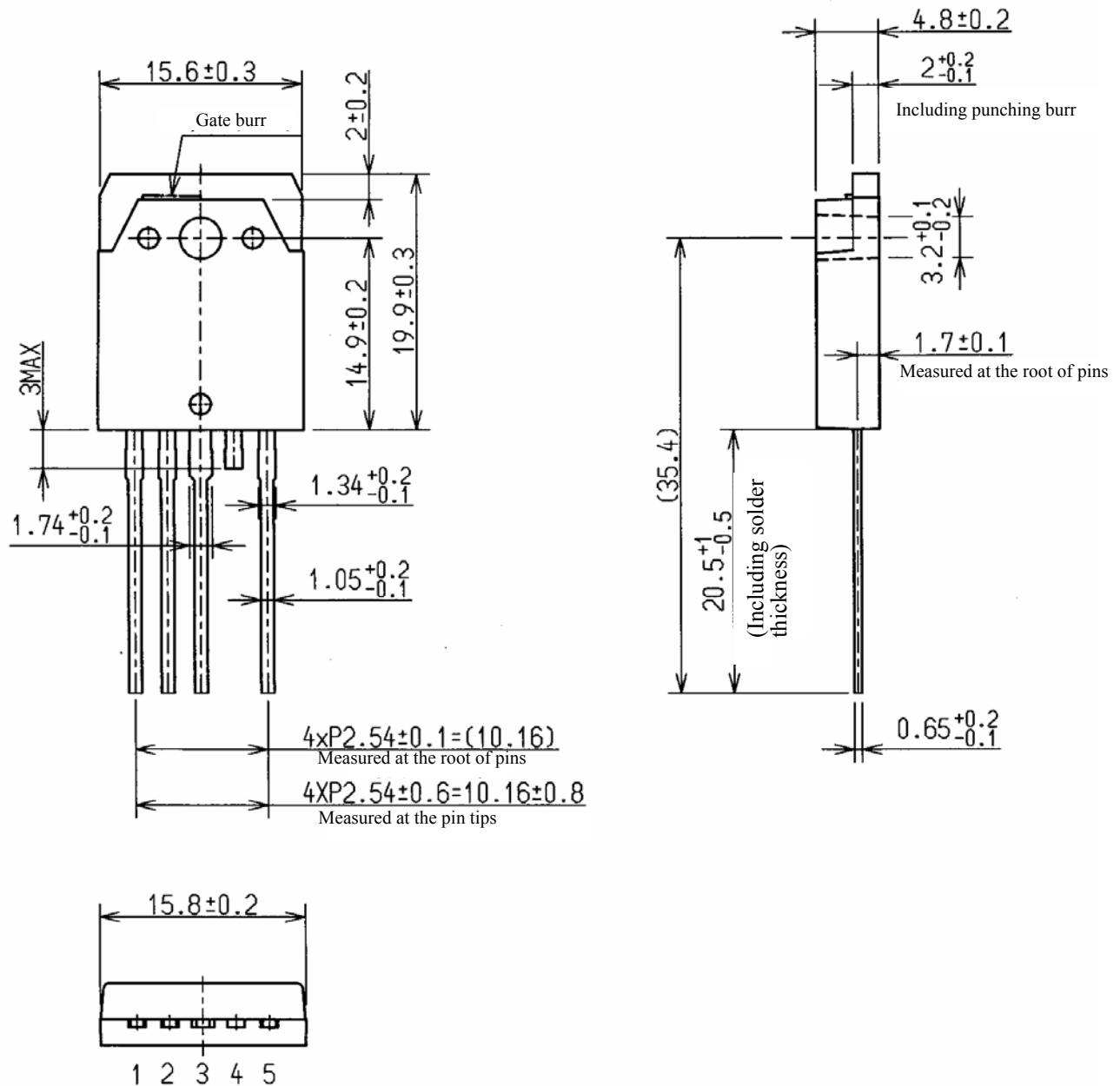


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External Dimensions

MT-105 (TO3P 5pin)



Mass: Approx. 6.0g

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