

# ELM2SD1005RAA NPN Epitaxial planar transistor

<http://www.elm-tech.com>

## ■General description

ELM2SD1005RAA is designed for using in driver stage of AF amplifier and general purpose switching application.

## ■Features

- Low  $V_{ce(sat)}$
- Good current gain linearity
- High  $V_{ceo}$  : 80V
- High  $I_c(DC)$  : 1A
- Package : SOT-89

## ■Maximum absolute ratings

Parameter	Symbol	Limit	Unit
Collector-base voltage	$V_{cbo}$	100	V
Collector-emitter voltage	$V_{ceo}$	80	
Emitter-base voltage	$V_{ebo}$	5	
Collector current (DC)	$I_c$	1	A
Collector current (Pulse)	$I_{cp}$	2 (Note 1)	
Power dissipation	$P_d$	0.6	W
		1 (Note 2)	
		2 (Note 3)	
Thermal resistance, junction to ambient	$R_{\theta ja}$	208	°C/W
		125 (Note 2)	
		62.5 (Note 3)	
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

Note : 1. Single Pulse  $P_w \leq 350\mu s$ , Duty  $\leq 2\%$ .

2. When mounted on FR-4 PCB with area measuring  $10 \times 10 \times 1$  mm.

3. When mounted on ceramic with area measuring  $40 \times 40 \times 1$  mm.

## ■Selection guide

### ELM2SD1005RAA-S

Symbol		
a	Product name	ELM2SD1005
b	Classification Of hFE	R : 180 to 390 Range
c	Package	A : SOT-89
d	Product version	A
e	Taping direction	S: Please refer to page 5

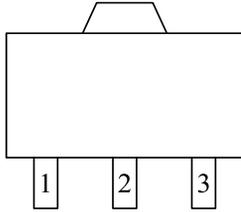
ELM2SD1005 R A A - S  
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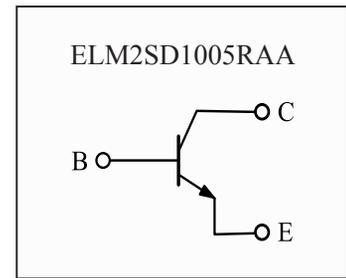
## ■ Pin configuration

SOT-89(TOP VIEW)



Pin No.	Pin name	Pin description
1	B	Base
2	C	Collector
3	E	Emitter

## ■ Standard circuit



## ■ Electrical characteristics

Top=25°C

Symbol	Condition	Min.	Typ.	Max.	Unit
BVcbo	Ic=50μA, Ie=0	100	-	-	V
BVceo	Ic=1mA, Ib=0	80	-	-	V
BVebo	Ie=50μA, Ic=0	5	-	-	V
Icbo	Vcb=80V, Ie=0	-	-	1	μA
Iebo	Veb=4V, Ic=0	-	-	1	μA
* Vce(sat)	Ic=500mA, Ib=20mA	-	-	0.3	V
* Hfe	Vce=3V, Ic=100mA	120	-	390	-
ft	Vce=10V, Ic=50mA, f=100MHz	-	100	-	MHz
Cob	Vcb=10V, f=1MHz	-	20	-	pF

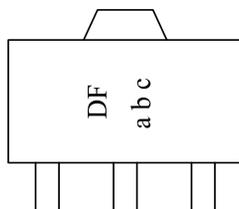
\* Pulse test: Pulse width ≤ 380μs, duty cycle ≤ 2%.

## ■ Classification Of hFE

Rank	R
Range	180~390

## ■ Marking

SOT-89



Mark	Content
DF	Product code
a, b, c	Assembly lot number

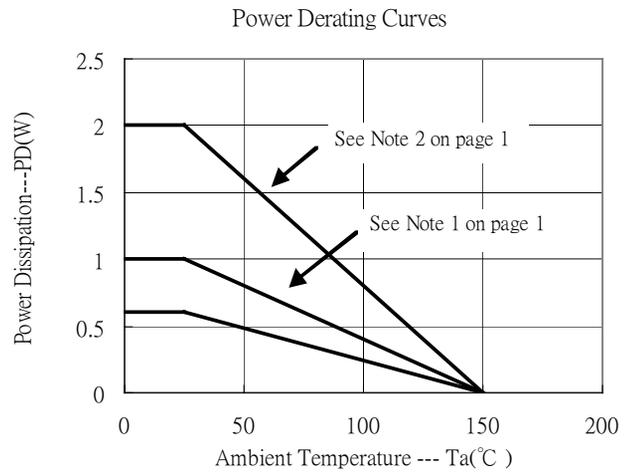
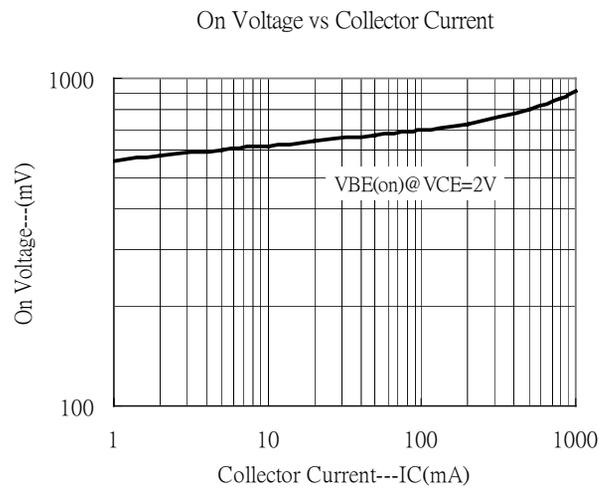
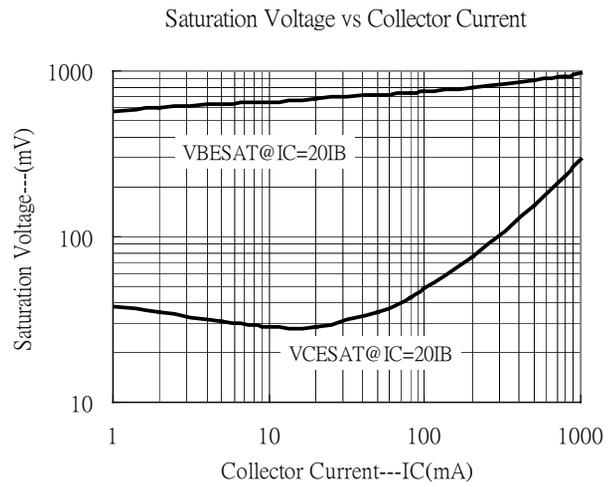
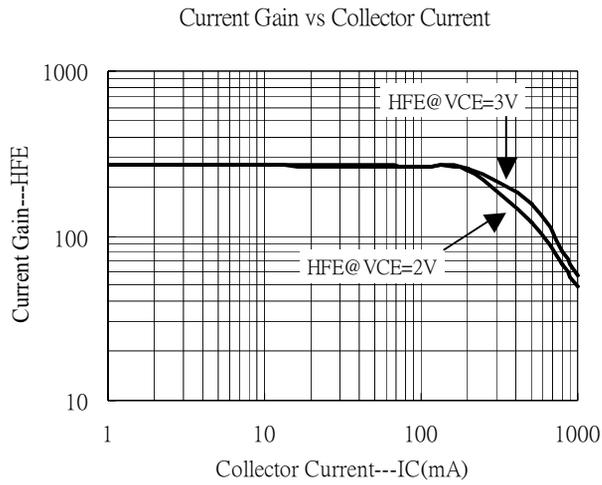
## ■ Shipping

- 1000 pcs / Tape & Reel

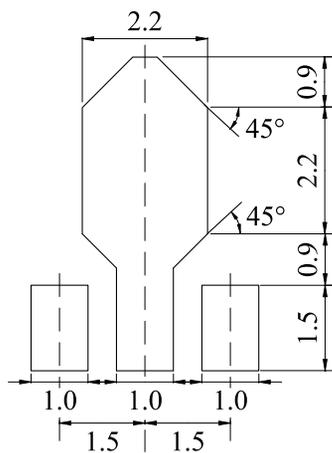
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## Typical characteristics



## Reference land pattern

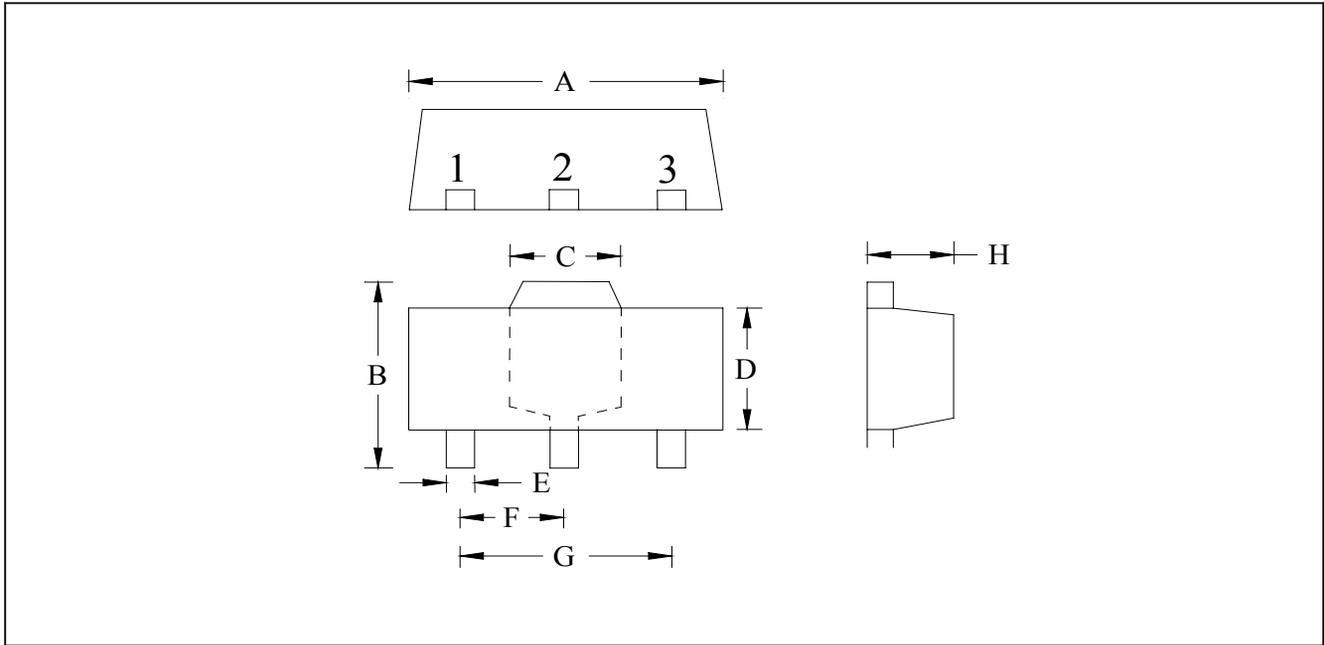


unit : mm

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## ■SOT-89 dimension



\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0591 TYP		1.50 TYP	
B	0.1551	0.1673	3.94	4.25	G	0.1181 TYP		3.00 TYP	
C	0.0610 REF		1.55 REF		H	0.0551	0.0630	1.40	1.60
D	0.0906	0.1024	2.30	2.60	I	0.0138	0.0173	0.35	0.44
E	0.0126	0.0205	0.32	0.52					

Notes : 1. Controlling dimension : millimeters.

2. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.

### Material :

- Lead : Pure tin plated.
- Mold Compound : Epoxy resin family, flammability solid burning class : UL94V-0.

