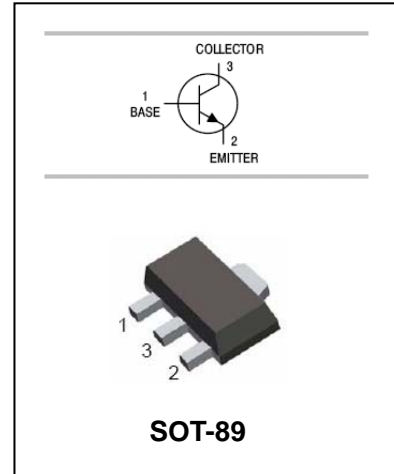


## High Voltage Fast Switching NPN Power Transistor

### 3DD13003

### FEATURES

- $P_C=1.5W$ (Mounted on ceramic substrate)
- High speed switching.
- Small flat package.



### APPLICATIONS

- High voltage switch mode application.

### ORDERING INFORMATION

Type No.	Marking	Package Code
3DD13003	13003	SOT-89

### MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	700	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current -Continuous	1.5	A
$P_C$	Collector Dissipation	1.5	W
$T_j, T_{stg}$	Junction and Storage Temperature	-55~150	$^\circ\text{C}$

## High Voltage Fast Switching NPN Power Transistor

### 3DD13003

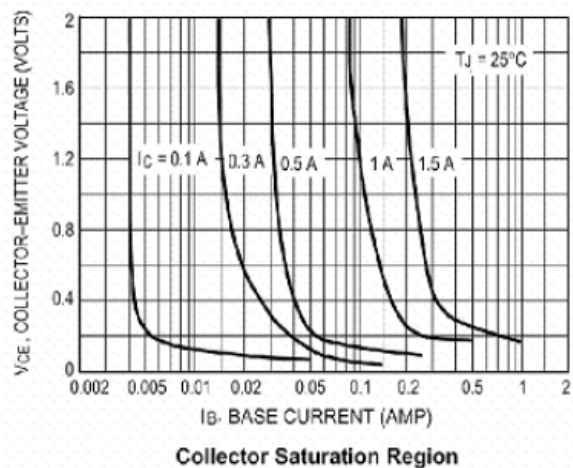
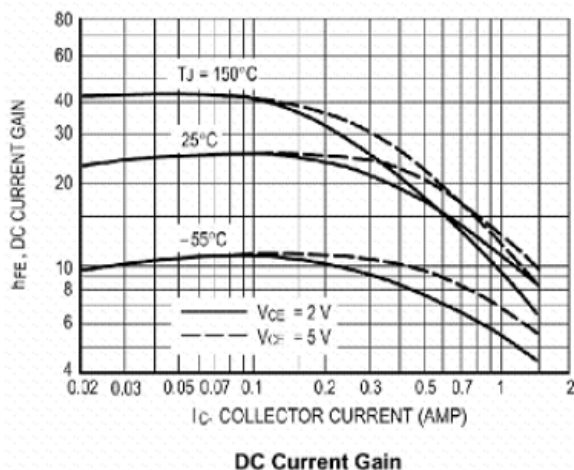
#### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	9			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=700V, I_E=0$			1000	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CB}=400V, I_E=0$			500	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=9V, I_C=0$			1000	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=5V, I_C=0.5A$	8		40	
		$V_{CE}=5V, I_C=1.5A$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1A, I_B=250mA$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1A, I_B=250mA$			1.2	V
Base-emitter voltage	$V_{BE}$	$I_E=2000mA$			3	V
Transition frequency	$f_T$	$V_{CE}=10V, I_C=0.1A,$ $f=1MHz$	5			MHz
Fall time	$t_f$	$I_C=1A, I_{B1}=I_{B2}=0.2A,$ $V_{CC}=100V$			0.5	$\mu S$
Storage time	$t_s$				2.5	$\mu S$

#### CLASSIFICATION OF $h_{FE(1)}$

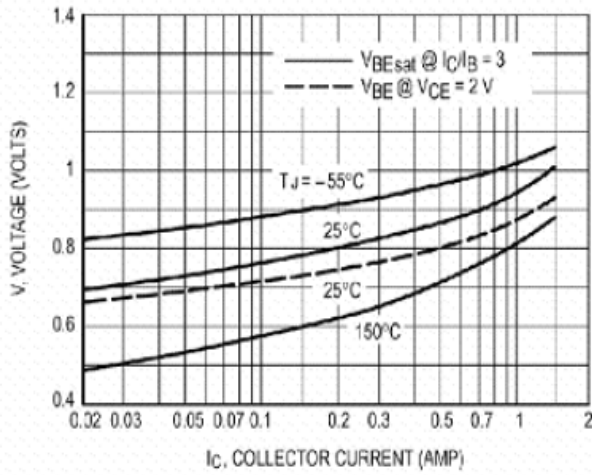
Range	8-10	10-15	15-20	20-25	25-30	30-35	35-40
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#### TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

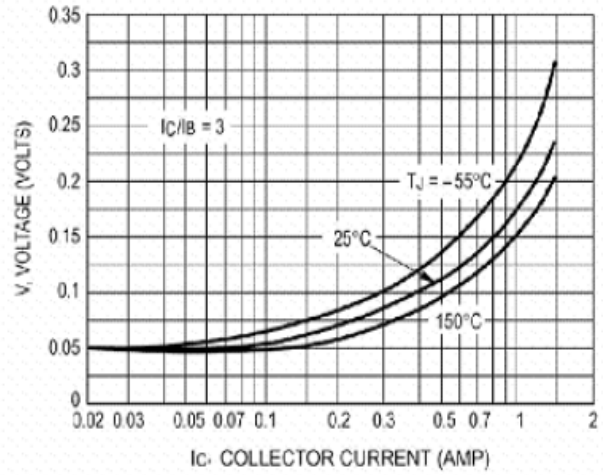


## High Voltage Fast Switching NPN Power Transistor

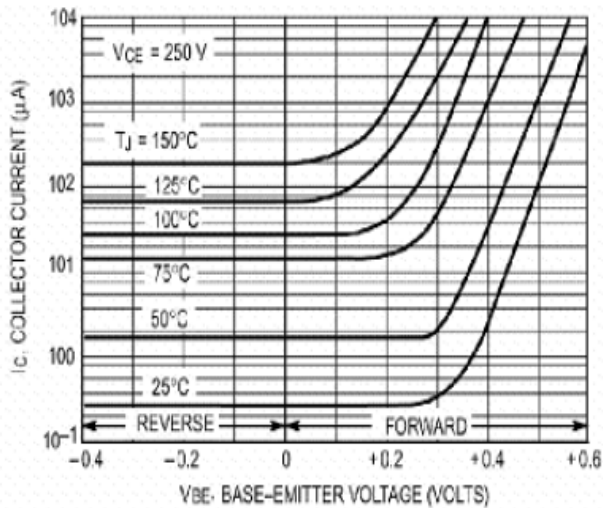
### 3DD13003



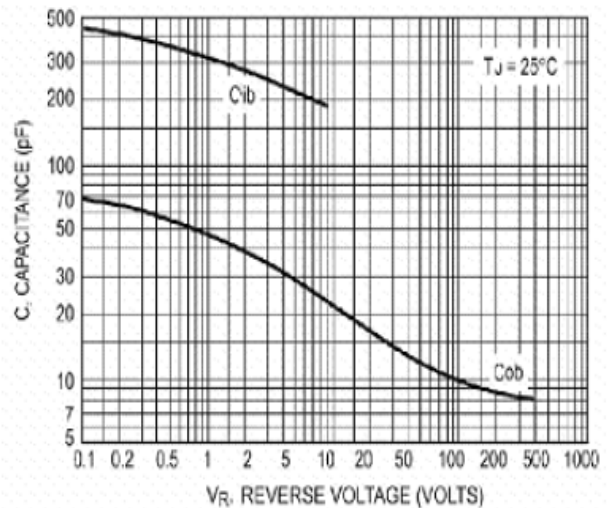
Base-Emitter Voltage



Collector-Emitter Saturation Region



Collector Cutoff Region



Capacitance

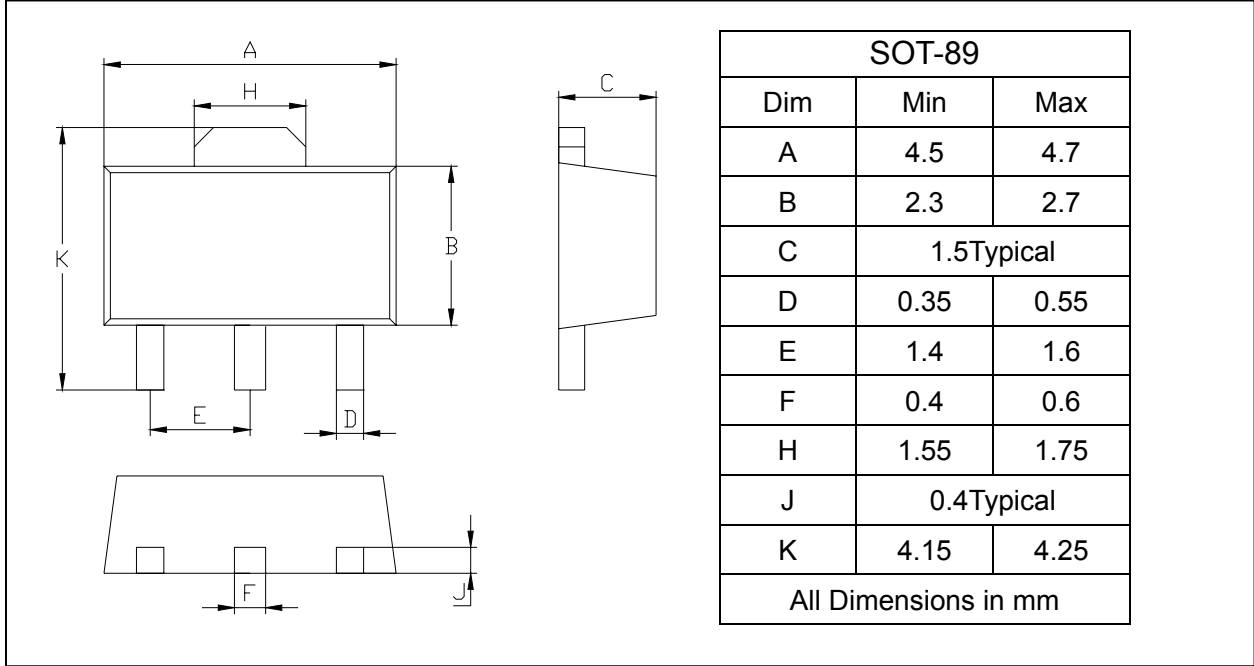
## High Voltage Fast Switching NPN Power Transistor

### 3DD13003

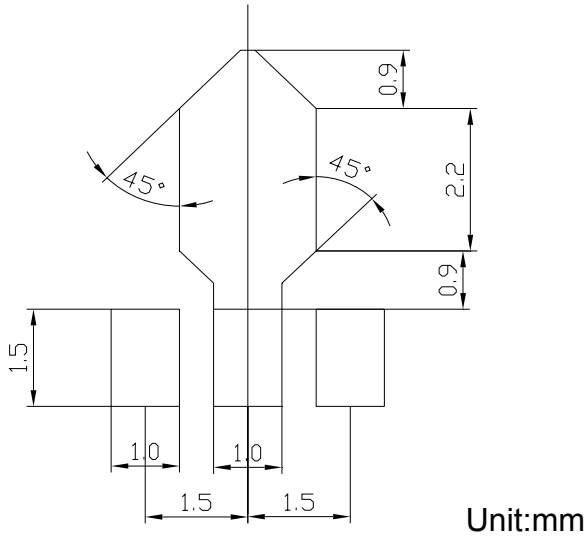
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
3DD13003	SOT-89	1000/Tape&Reel

[www.s-manuals.com](http://www.s-manuals.com)