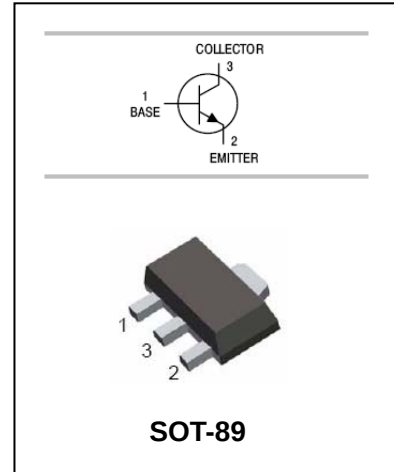


High Voltage Fast Switching NPN Power Transistor

3DD13003B

FEATURES

- $P_C=1.3W$ (Mounted on ceramic substrate).
- High speed switching.
- Small flat package.



APPLICATIONS

- High voltage switch mode application.

ORDERING INFORMATION

Type No.	Marking	Package Code
3DD13003B	13003B	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	0.75	W
T_j, T_{stg}	Junction and Storage Temperature	-55 to +150	$^{\circ}\text{C}$



High Voltage Fast Switching NPN Power Transistor

3DD13003B

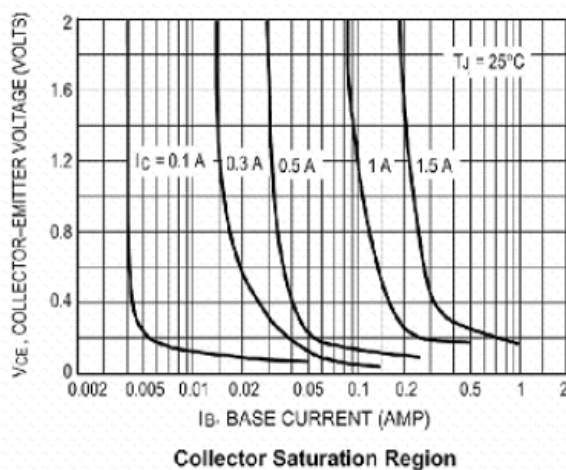
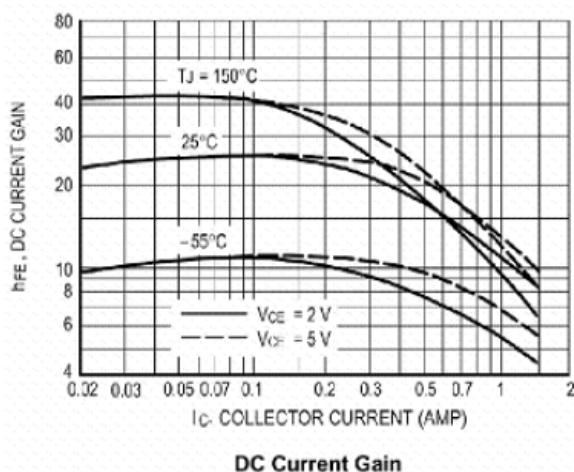
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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	μA
Collector cut-off current	I_{CEO}	$V_{CB}=400V, I_E=0$			500	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7V, I_C=0$			1000	μA
DC current gain	h_{FE}	$V_{CE}=5V, I_C=0.5A$ $V_{CE}=5V, I_C=1.5mA$	8 5		40	
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	μS
Storage time	t_s				2.5	μS

CLASSIFICATION OF $h_{FE(1)}$

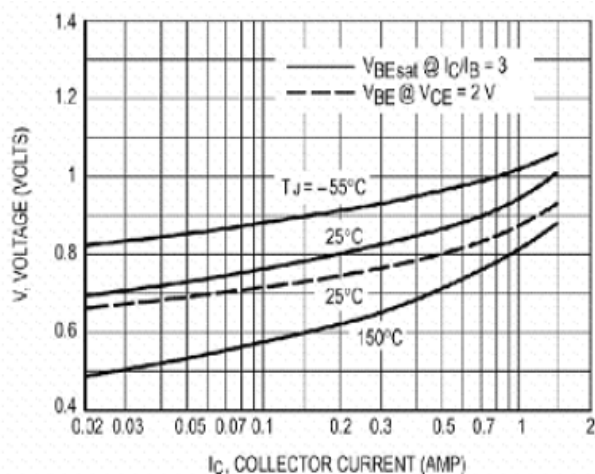
Range	8-10	10-15	15-20	20-25	25-30	30-35	35-40
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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

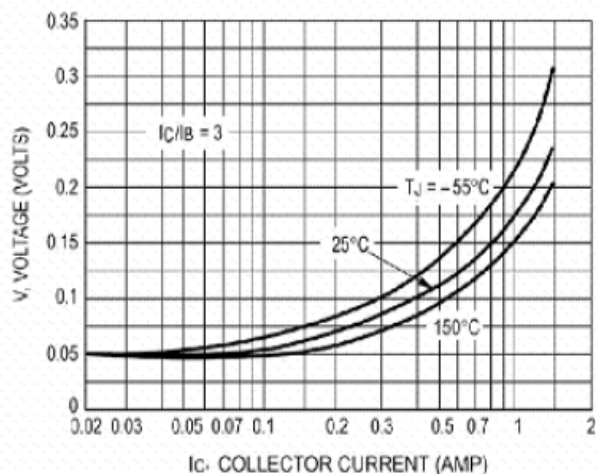


High Voltage Fast Switching NPN Power Transistor

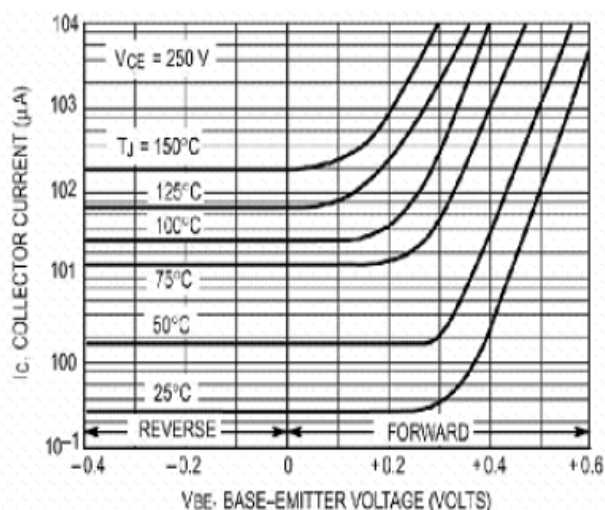
3DD13003B



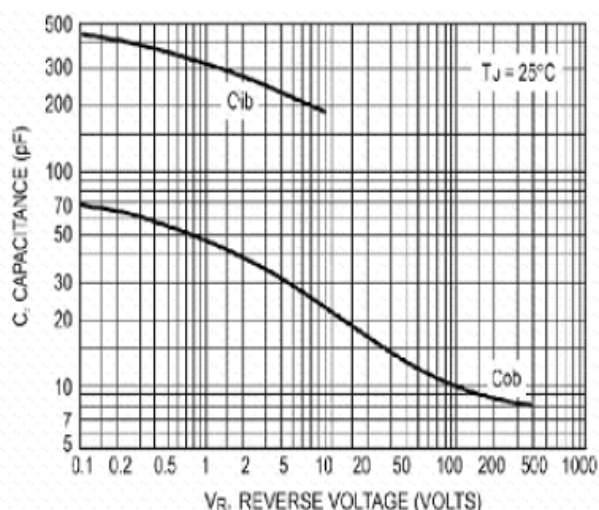
Base-Emitter Voltage



Collector-Emitter Saturation Region



Collector Cutoff Region



Capacitance

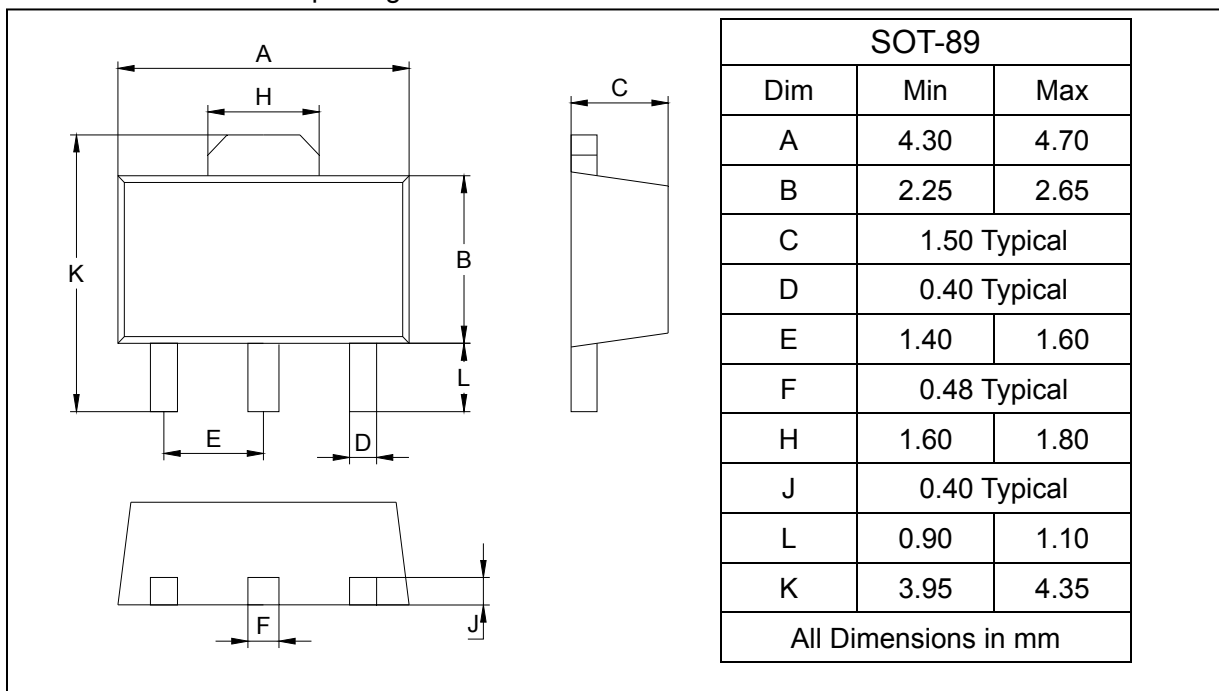
High Voltage Fast Switching NPN Power Transistor

3DD13003B

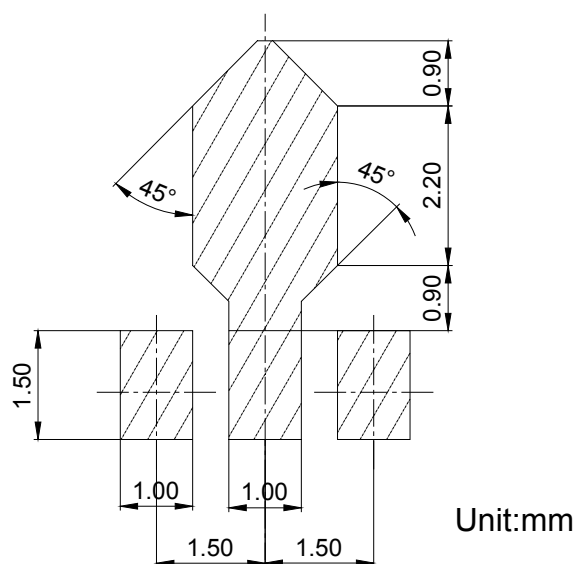
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
3DD13003B	SOT-89	1000/Tape&Reel