

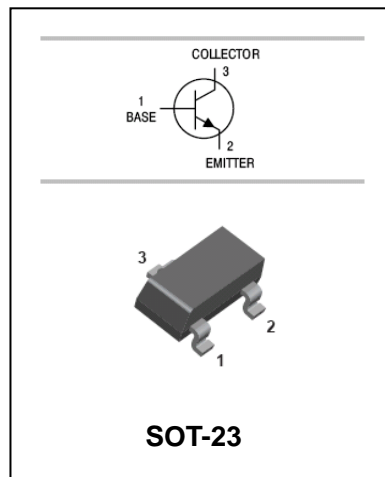


# High Voltage Fast Switching NPN Power Transistor

## 3DD13001

### FEATURES

- $P_C=350\text{mW}$ (Mounted on ceramic substrate).
- High speed switching.
- Small flat package.



### APPLICATIONS

- High voltage switch mode application.

### ORDERING INFORMATION

Type No.	Marking	Package Code
3DD13001	13001	SOT-23

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	600	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current -Continuous	0.2	A
$P_C$	Collector Dissipation	350	mW
$T_j, T_{stg}$	Junction and Storage Temperature	-55 to +150	$^\circ\text{C}$



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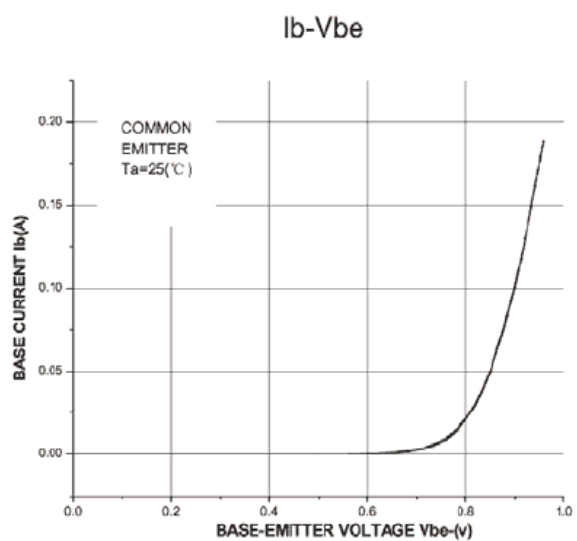
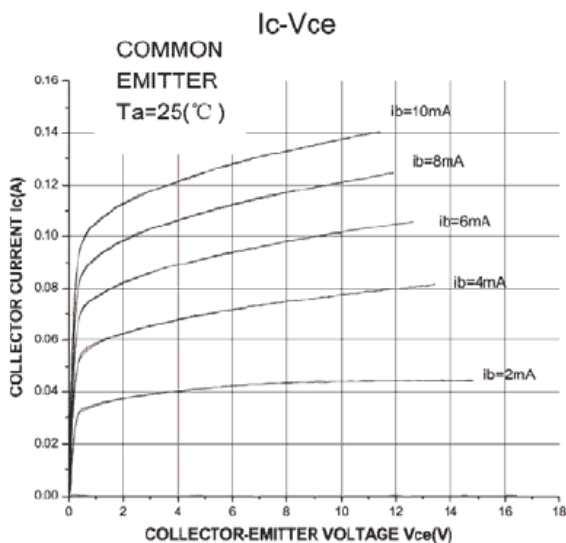
### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	7			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=600V, I_E=0$			100	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE}=400V, I_B=0$			200	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=7V, I_C=0$			100	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=20V, I_C=20mA$	10		40	
		$V_{CE}=10V, I_C=0.25A$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=10mA$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50mA, I_B=10mA$			1.2	V
Transition frequency	$f_T$	$V_{CE}=20V, I_C=20mA, f=1MHz$	8			MHz
Fall time	$t_f$	$I_C=50mA, I_{B1}=I_{B2}=5mA, V_{CC}=45V$			0.3	$\mu S$
Storage time	$t_s$				1.5	$\mu S$

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

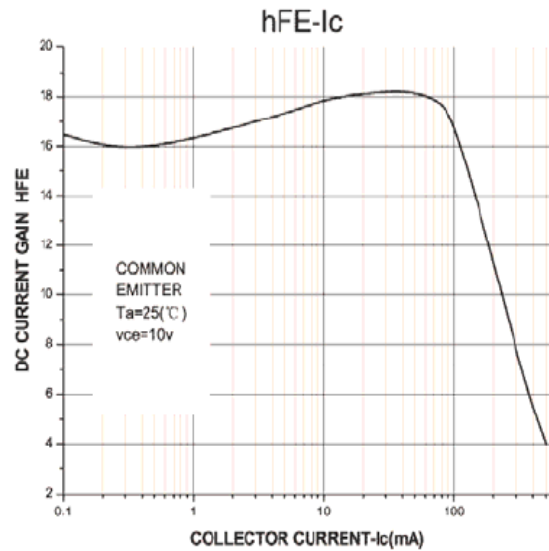
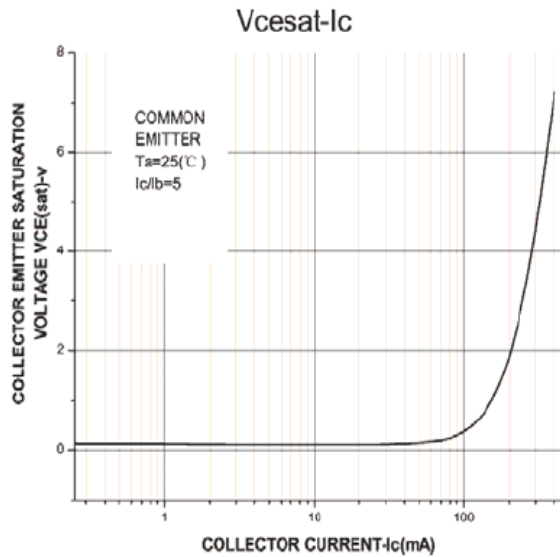
Range	10-15	15-20	20-25	25-30	30-35	35-40

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



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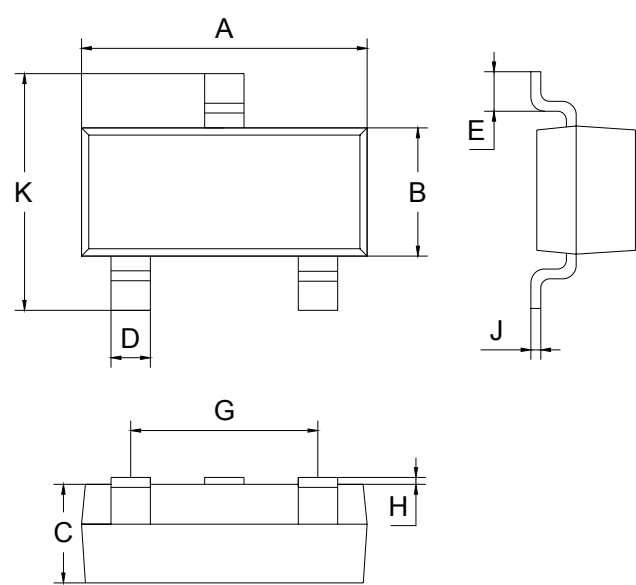
## 3DD13001



### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		



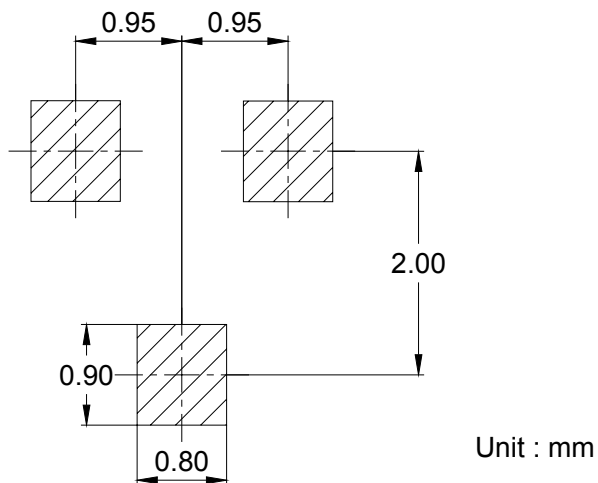
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## High Voltage Fast Switching NPN Power Transistor

**3DD13001**

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### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
3DD13001	SOT-23	3000/Tape&Reel