



High Voltage Fast Switching NPN Power Transistor

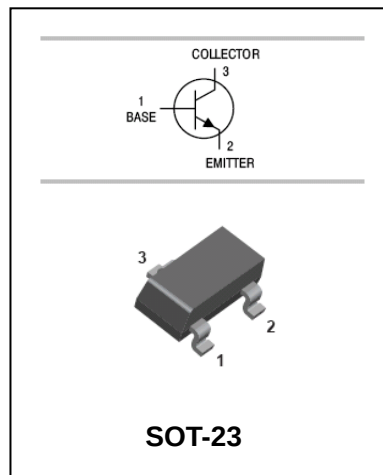
3DD13001

FEATURES

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



Lead-free



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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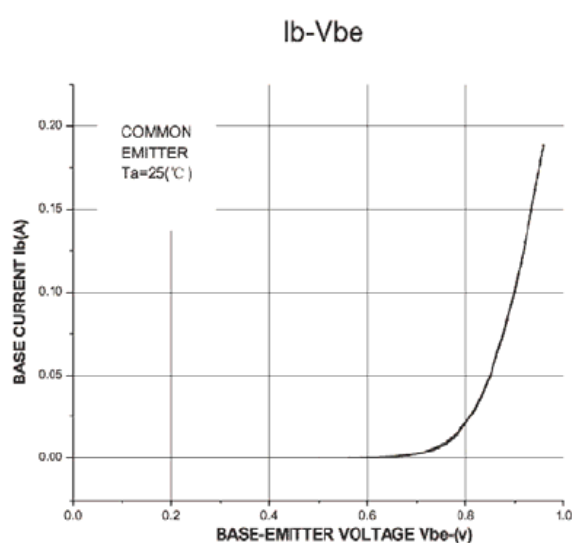
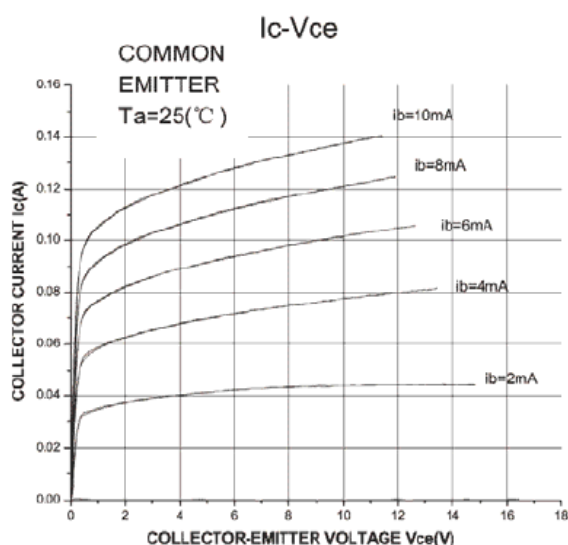
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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	μA
Collector cut-off current	I_{CEO}	$V_{CE}=400V, I_B=0$			200	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7V, I_C=0$			100	μA
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	μS
Storage time	t_s				1.5	μS

CLASSIFICATION OF $h_{FE(1)}$

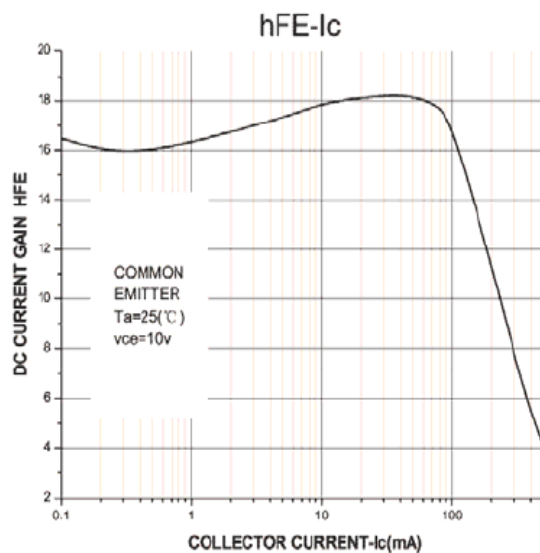
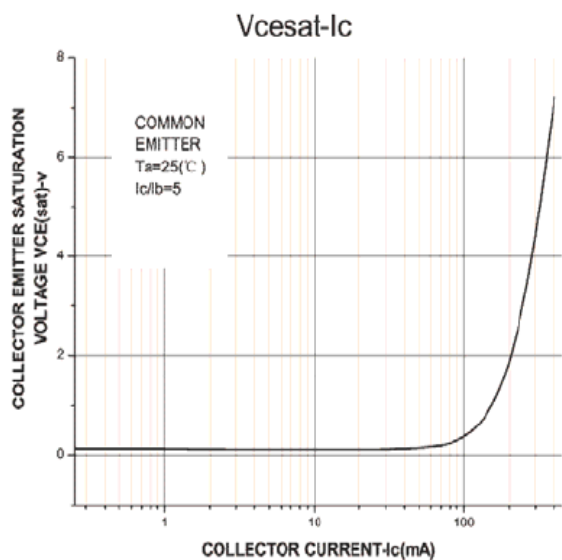
Range	10-15	15-20	20-25	25-30	30-35	35-40
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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



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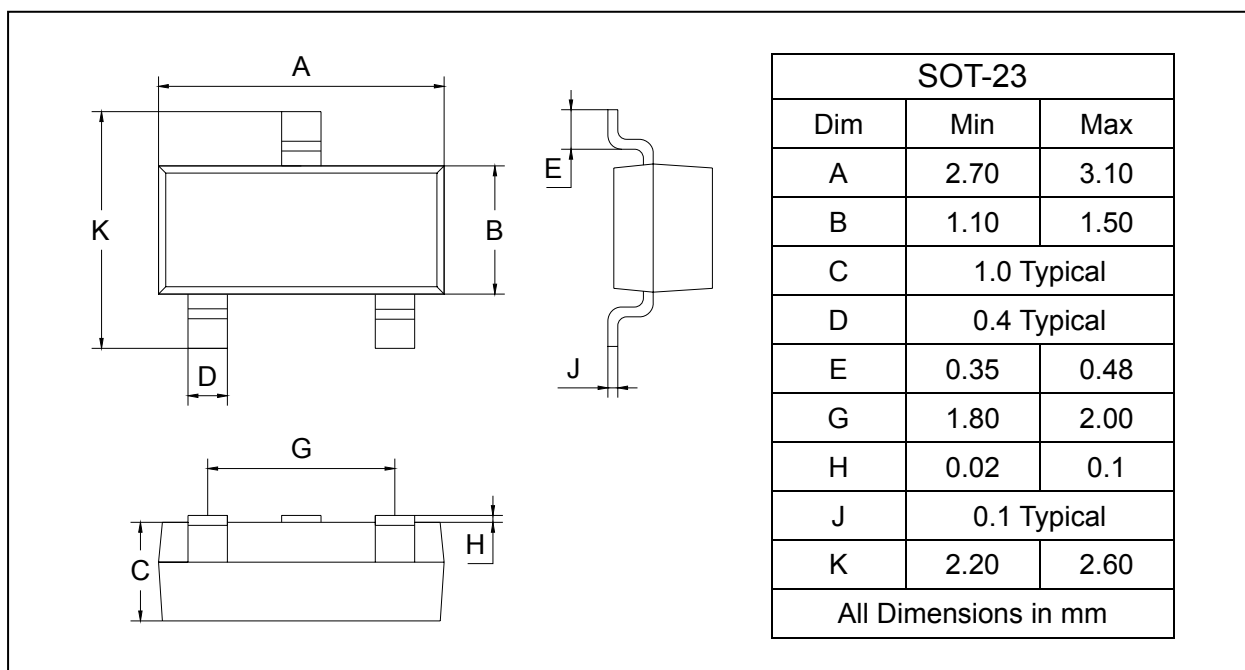
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PACKAGE OUTLINE

Plastic surface mounted package

SOT-23

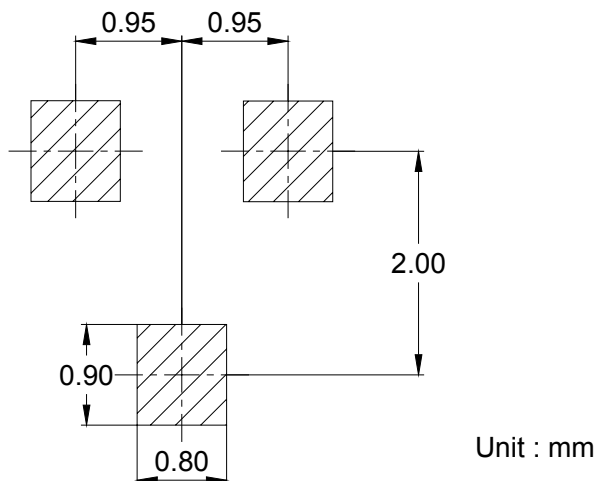




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3DD13001

SOLDERING FOOTPRINT



PACKAGE INFORMATION

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