



HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTER

D13001A

Characteristic/features

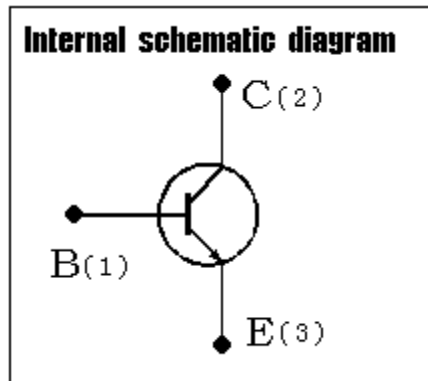
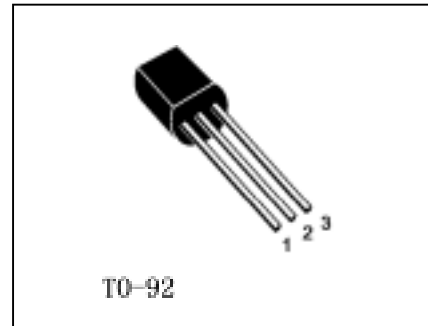
- High breakdown voltage
- High current capability
- High switching speed
- High reliability

Application

- Energy-saving light
- Electronic ballasts
- High frequency switching power supply
- High frequency power transform
- Commonly power amplifier circuit

Description

3DD13001A is a silicon npn power transistor. The main process include high voltage planer process, triple diffusion process and multi-surface passivation



Absolute maximum ratings (T_c=25 °C)

ITEM	SYMBOL	RATING	UNITS
Collector-base voltage	V _{CB0}	600	V
Collector-emitter voltage	V _{CE0}	400	V
Emitter-base voltage	V _{EB0}	9	V
Collector current	I _c	0.8	A
Collector dissipation	P _c	1	W
Junction temperature	T _j	150	
Junction temperature	T _{stg}	-55~+150	



Electrical characteristics ($T_C=25$)

Item	Symbol	Testing term	Min	Max	Units
Collector-emitter breakdown voltage	$V_{(BR)CE0}$	$I_C=10mA, I_B=0$	400		V
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_C=1mA, I_B=0$	600		V
Emitter-base breakdown voltage	$V_{(BR)EB0}$	$I_E=1mA, I_C=0$	9		V
Collector-base Cutoff current	I_{CB0}	$V_{CB}=580V, I_E=0$		5	μA
Collector-emitter Cutoff current	I_{CE0}	$V_{CE}=400V, I_B=0$		10	μA
Emitter-base Cutoff current	I_{EB0}	$V_{EB}=7V, I_C=0$		5	μA
DC current gain	H_{fe1}	$V_{CE}=10V, I_C=50mA$	8	40	
	H_{fe1}	$V_{CE}=5V, I_C=1A$	3.5		
Collector-emitter Saturation voltage	$V_{CE(sat)}(1)$	$I_C=100mA, I_B=20mA$		0.5	V
	$V_{CE(sat)}(2)$	$I_C=0.5A, I_B=0.1A$		0.8	V
Base-emitter Saturation voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=20mA$		1.1	V
Fall time	t_f	$V_{CC}=24V, I_C=0.1A,$ $I_{B1}=-I_{B2}=0.02A$		0.7	μS
Storage time	t_s	$V_{CC}=24V, I_C=0.1A,$ $I_{B1}=-I_{B2}=0.02A$		4	μS
Transition frequency	f_T	$V_{CE}=10V, I_C=20mA$	4	-	MHz

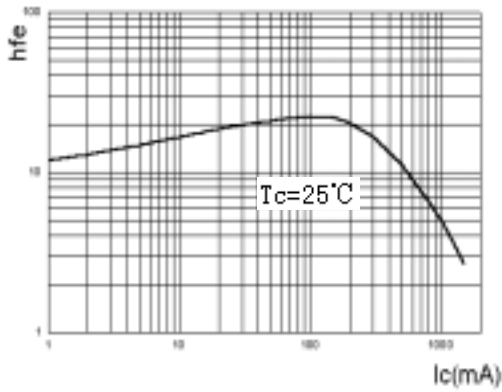
Thermal characteristics

Item	Symbol	Min	Max	Units
Thermal resistance Junction to atmosphere	$R_{th(j-a)}$		125	/W

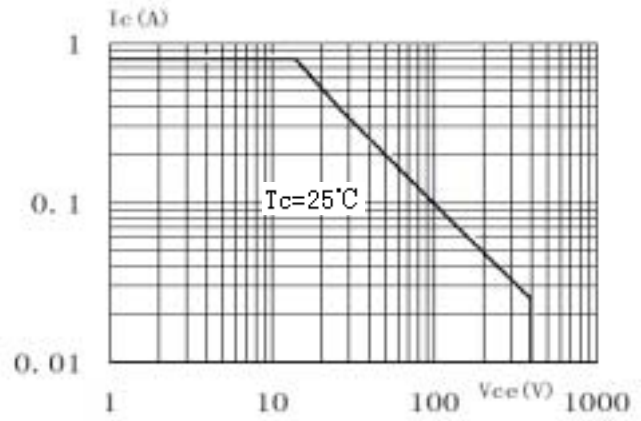


Typical characteristics:

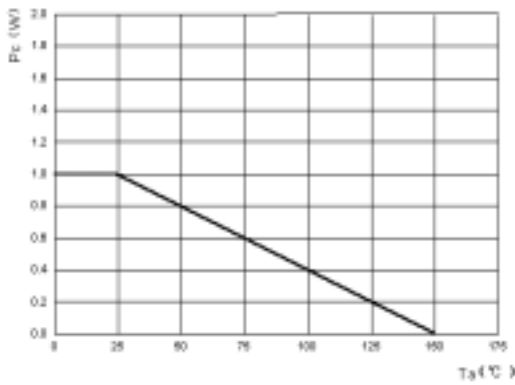
DC current gain



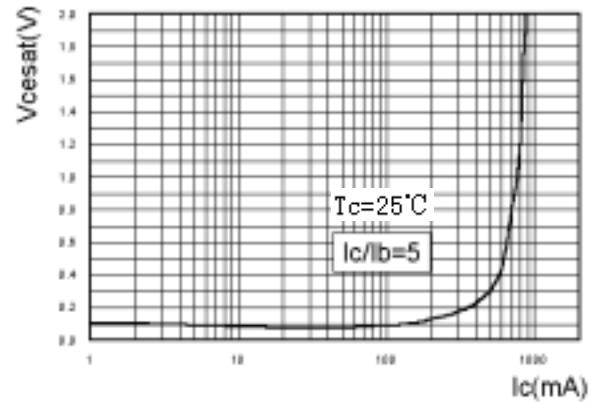
SOA(DC)



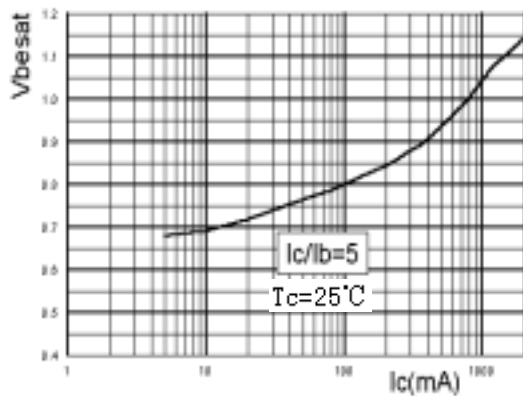
Power dissipation



Collector-emitter saturation voltage

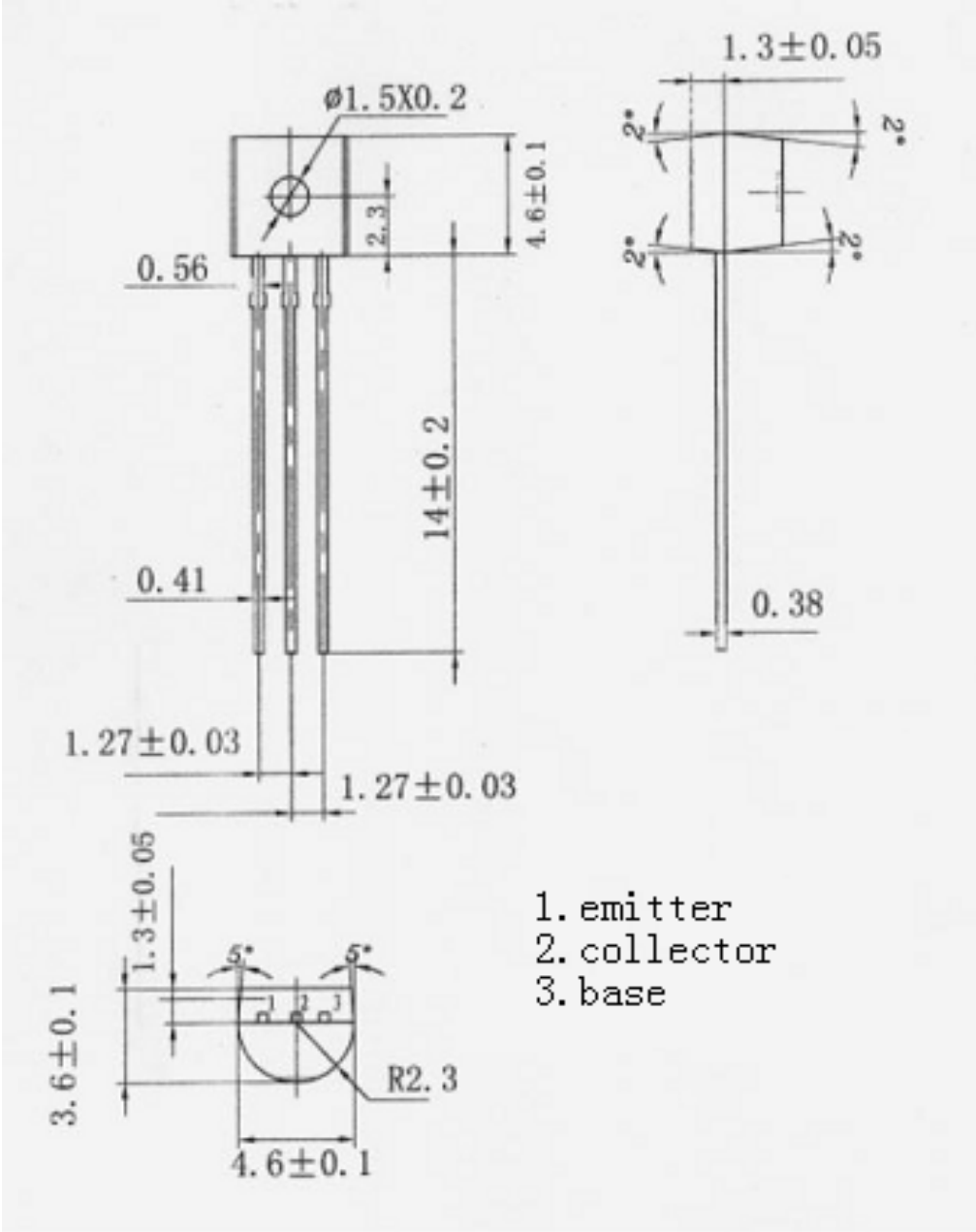


Base-emitter saturation voltage



Package dimensions

T0 - 92



- 1. emitter
- 2. collector
- 3. base

Units : mm

● **NOTES**

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