

CHINA GUANGDONG DONGGUAN HAROM ELECTRONICS CO., LTD

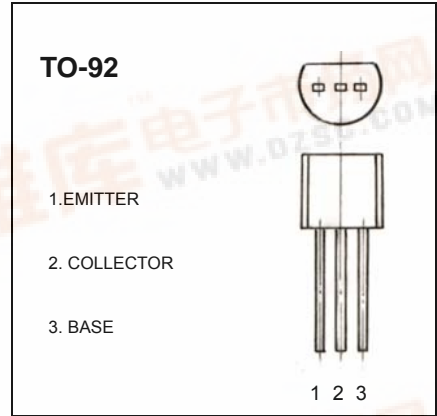
TO-92 Plastic-Encapsulate Transistors

www.harom.cn

3DD13002B TRANSISTOR ( NPN )

FEATURES

· power switching applications



MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	600	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	0.8	A
P <sub>C</sub>	Collector Power Dissipation	0.9	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	600			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	400			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 100μA, I <sub>C</sub> =0	6			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 610V, I <sub>E</sub> =0			100	μA
	I <sub>CEO</sub>	V <sub>CB</sub> = 405V, I <sub>E</sub> =0			100	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 6 V, I <sub>C</sub> =0			100	μA
Dc current gain	h <sub>FE1</sub>	V <sub>CE</sub> = 10 V, I <sub>C</sub> =200mA	9		40	
	h <sub>FE2</sub>	V <sub>CE</sub> = 10 V, I <sub>C</sub> =0.25mA	5			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =200mA, I <sub>B</sub> =40mA			0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =200mA, I <sub>B</sub> =40mA			1.1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =100mA f =1MHz	5			MHz
Fall time	t <sub>f</sub>	I <sub>C</sub> =1A, I <sub>B1</sub> =-I <sub>B2</sub> =0.2A			0.5	μs
Storage time	t <sub>s</sub>	V <sub>CC</sub> =100V			2.5	μs

CLASSIFICATION OF h<sub>FE1</sub>

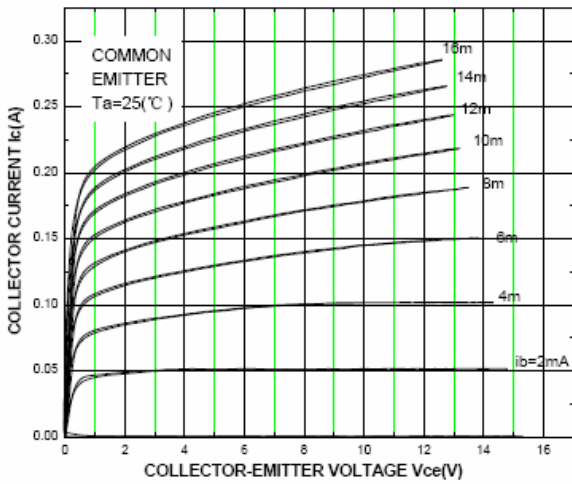
Range	9-15	15-20	20-25	25-30	30-35	35-40
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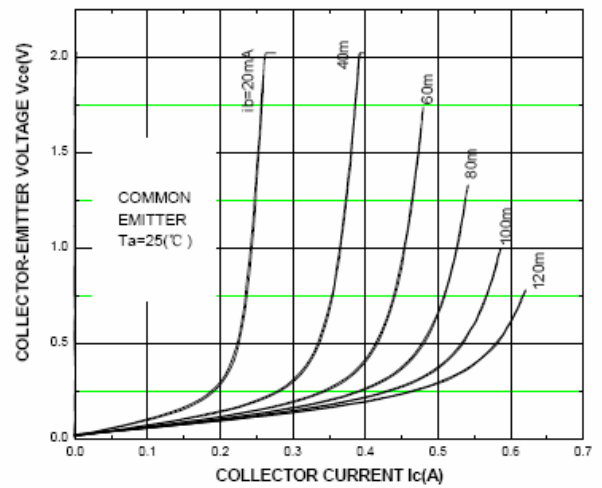
# Typical characteristics

3DD13002B

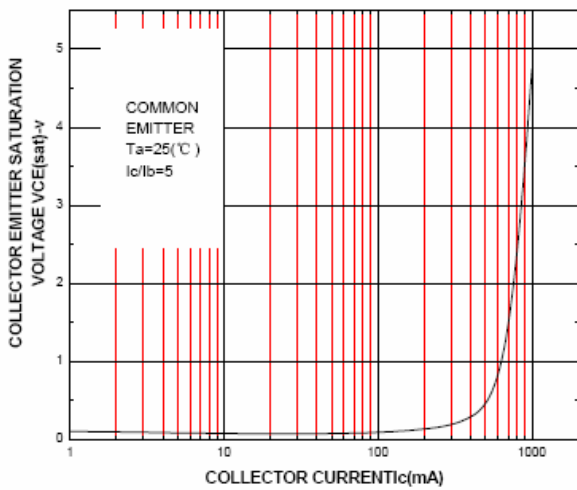
Ic-Vce



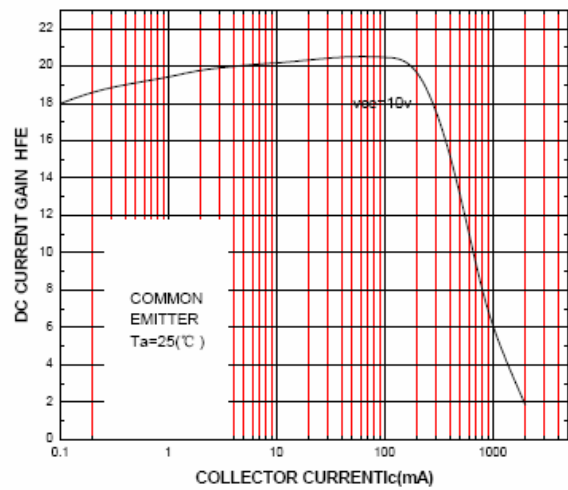
Vce-Ic



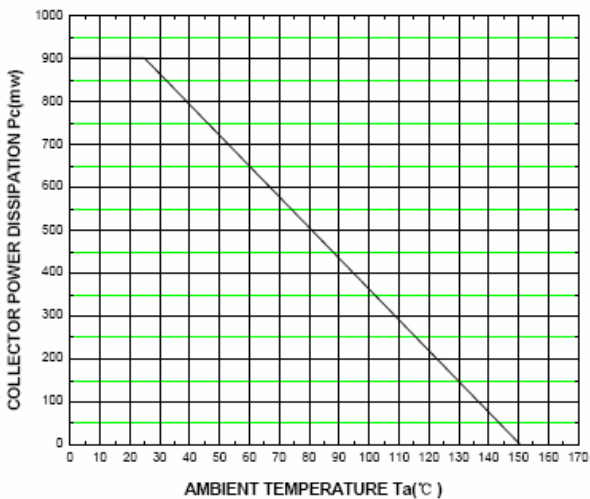
Vcesat-Ic



hFE-Ic



Pc-Ta



C-Vr

