

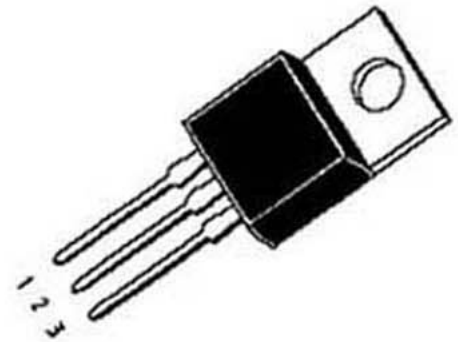
## TO-220 Plastic-Encapsulate Transistors

**D304X** TRANSISTOR(NPN)

## ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	VCBO	700	V
Collector-Emitter Voltage	VCEO	400	V
Emitter-Base voltage	VEBO	9	V
Collector Current	Ic	10	A
Collector Power Dissipation	Pc	80	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

TO-220



1. Base 2. Collector 3. Emitter

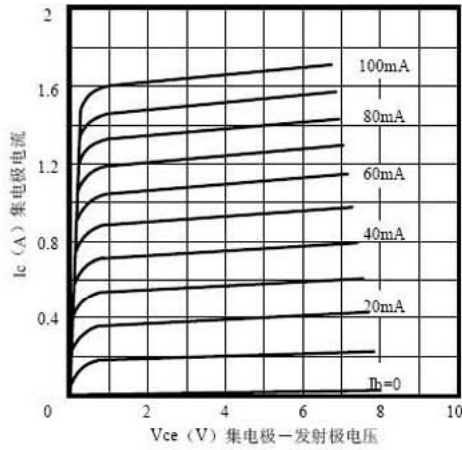
## ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

Characteristic	Symbol	Test conditions	MIN	TYP	MAX	Unit
Collector -base breakdown voltage	V(BR)CBO	Ic=1000μA, IE=0	700			V
*Collector -emitter Sustaining Voltage	V(BR)CEO	Ic=10mA, IB=0	400			V
Emitter cut-off current	IEBO	VEB= 9 V, IC=0			1000	μA
DC current gain	HFE (1)	VCE=2V, IC=0.5A	8		40	
	HFE (2)	VCE=10V, IC=0.5m A	5			
Collector -emitter saturation voltage	VCE(sat)	IC=1000m A, IB= 250 m A			1	V
Base-emitter saturation voltage	VBE(sat)	IC=1000m A, IB= 250m A			1.2	V
Base Emitter Voltage	VBE(ON)	IE= 2000 m A			3	V
Current Gain Bandwidth Product	fT	VCE=10V, Ic=100mA f=1MHz	5			MHZ
Turn On Time	TON	Ic=1A, IB1=IB2=0.2A VCC=100V				μs
Storage Time	ts				0.5	μs
Fall Time	tf				0.5	μs

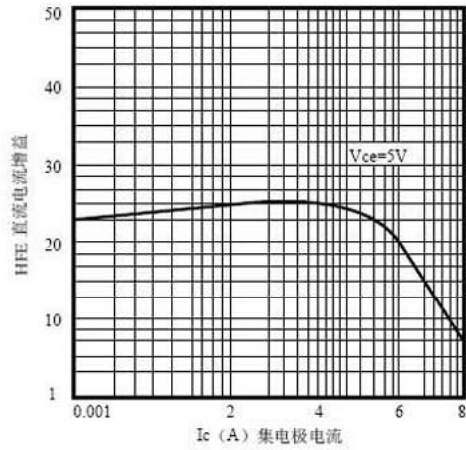
## Typical Characteristics

# D304X

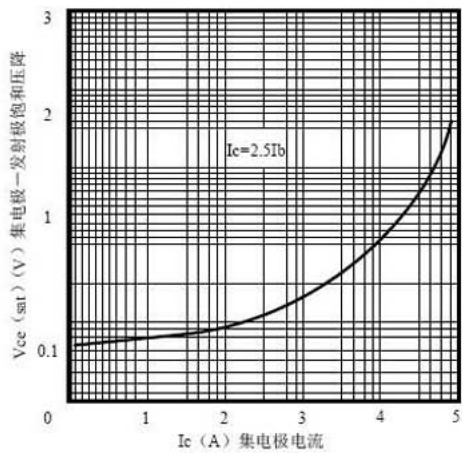
静态输出特性



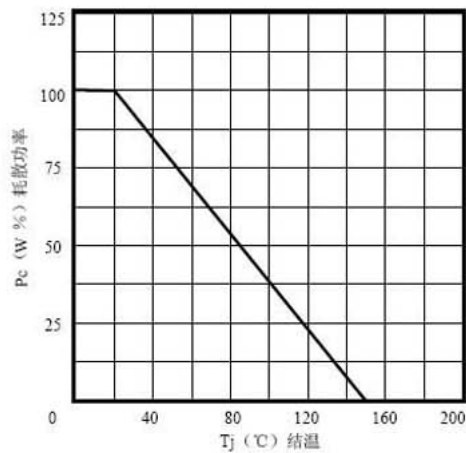
HFE 直流电流增益 -  $I_c$  集电极电流



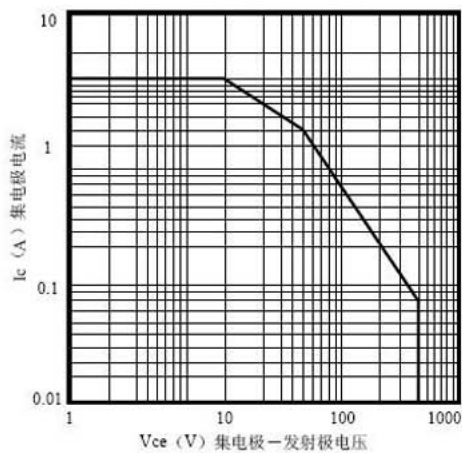
$V_{ce(sat)}$  集电极-发射极饱和压降 -  $I_c$  集电极电流



$P_c$  耗散功率 -  $T_j$  结温

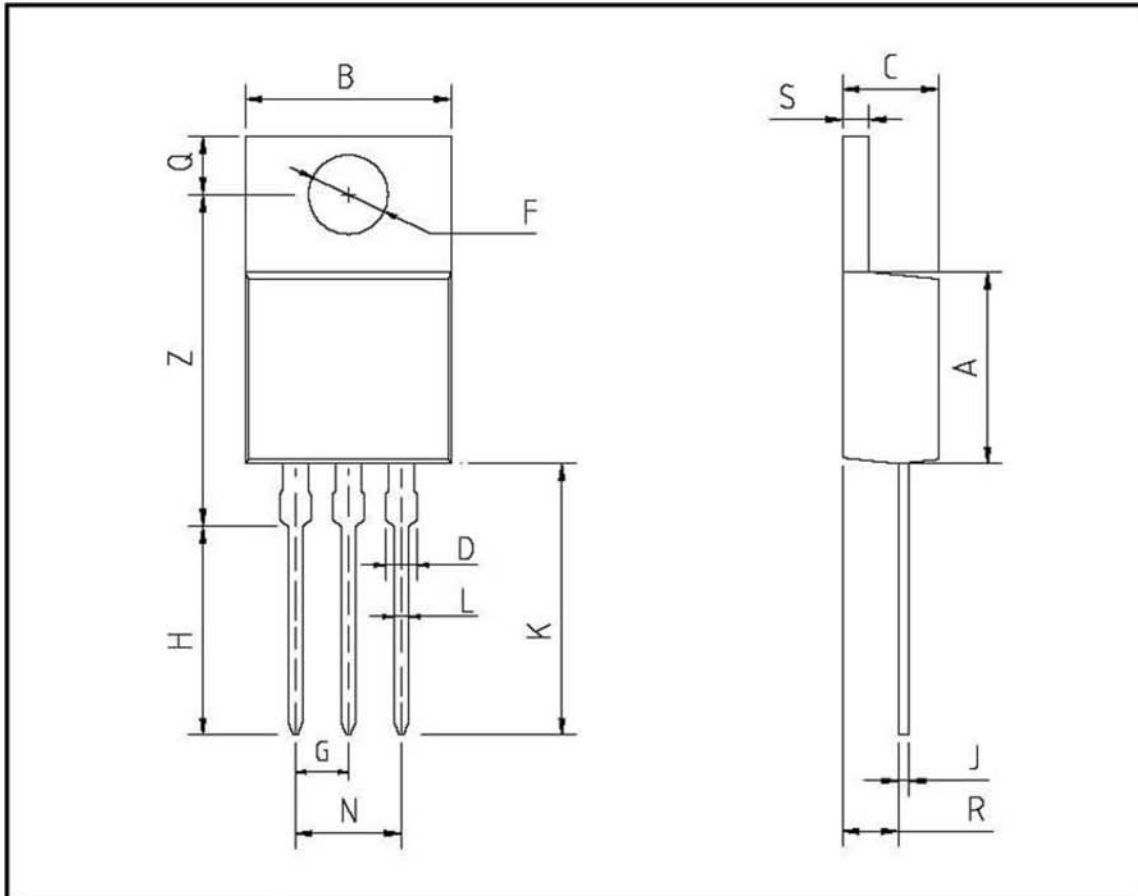


SOA (DC) 安全工作区



## TO-220 外形尺寸图

单位: mm



符号	最小值	典型值	最大值
A	8.8	9	9.2
B	9.5	10	10.5
C	4.2	4.5	4.8
D	1.2	1.25	1.3
F	φ3.4	φ3.6	φ3.8
G		2.54	
H	9.5	10	10.5
J	0.43	0.45	0.47
K	13	13.5	14
L	0.75	0.8	0.85
N		5.08	
P			
Q	2.7	2.8	2.9
R	2.7	2.75	2.8
S	1.2	1.25	1.3
Z	15.7	15.9	16.1