

TO-92L Bipolar Transistor 双极型三极管

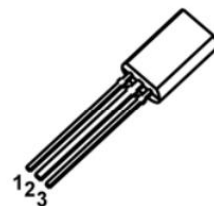
■ Features 特点

NPN Low Saturation Voltage 低饱和压降
High Switching Speed 高速开关

■ Absolute Maximum Ratings 最大额定值

TO-92L

1. EMITTER
2. COLLECTOR
3. BASE



Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Collector-Base Voltage 集电极基极电压	V_{CBO}	50	V
Collector-Emitter Voltage 集电极发射极电压	V_{CEO}	50	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	5	V
Collector Current 集电极电流	I_C	2	A
Power dissipation 耗散功率	$P_C(T_a=25^{\circ}\text{C})$	1	W
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	125	$^{\circ}\text{C}/\text{W}$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^{\circ}\text{C}$	

■ Device Marking 产品打标

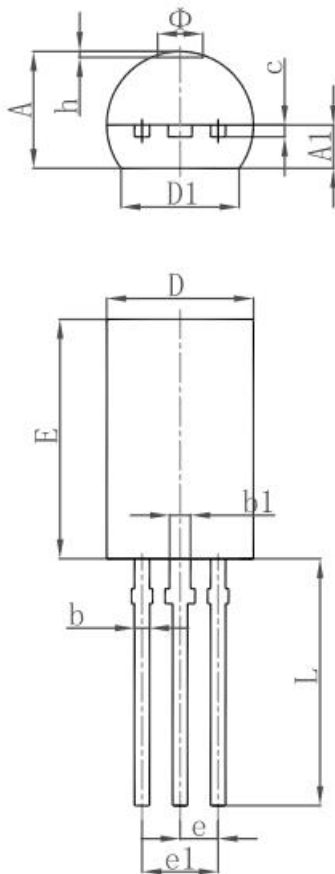
$H_{FE}(1)$	70-140(O)	120-240(Y)
Mark	C3209	

■Electrical Characteristics 电特性

(TA=25℃ unless otherwise noted 如无特殊说明, 温度为 25℃)

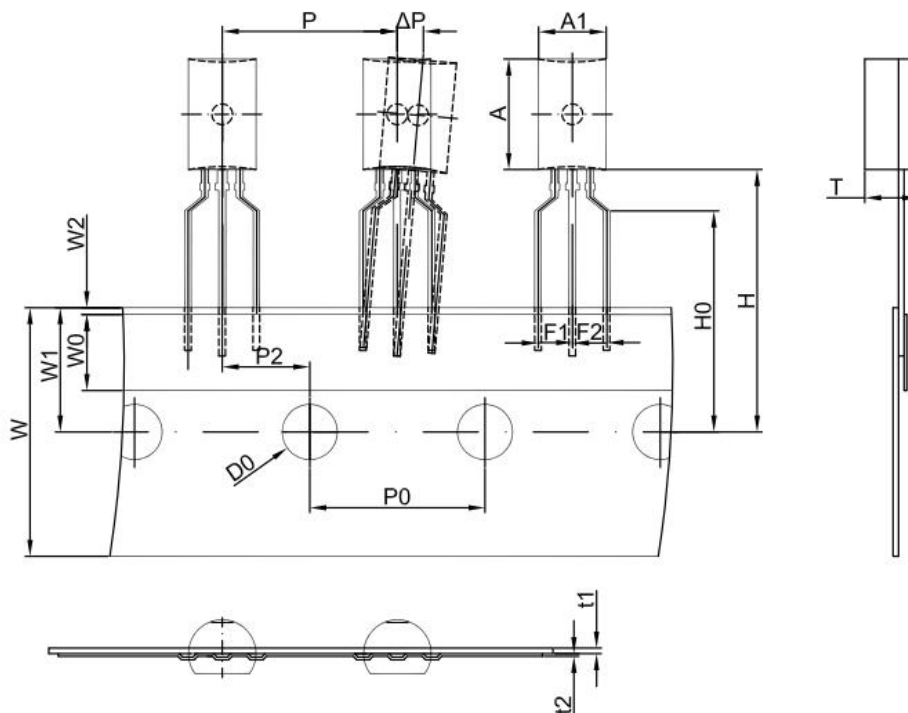
Characteristic 特性参数	Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector-Base Breakdown Voltage 集电极基极击穿电压(IC=100μA, IE=0)	BV _{CBO}	50	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压(IC=1mA, IB=0)	BV _{CEO}	50	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压(IE=100μA, IC=0)	BV _{EBO}	5	—	—	V
Collector-Base Leakage Current 集电极基极漏电流(V _{CB} =50V, IE=0)	I _{CBO}	—	—	0.1	μA
Emitter-Base Leakage Current 发射极基极漏电流(V _{EB} =5V, IE=0)	I _{EBO}	—	—	0.1	μA
DC Current Gain 直流电流增益(V _{CE} =2V, IC=500mA)	H _{FE} (1)	70	—	240	
DC Current Gain 直流电流增益(V _{CE} =2V, IC=1.5A)	H _{FE} (2)	40	—	—	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降(IC=1A, IB=50mA)	V _{CE(sat)}	—	—	0.5	V
Base-Emitter Saturation Voltage 基极发射极饱和压降(IC=1A, IB=50mA)	V _{BE(sat)}	—	—	1.2	V
Transition Frequency 特征频率(V _{CE} =2V, IC=500mA)	f _T	—	100	—	MHz
Output Capacitance 输出电容(V _{CB} =10V, IE=0, f=1MHz)	C _{ob}	—	30	—	pF
Turn-on Time 开通时间 (V _{CE} =30V, IB1= -IB2=50mA)	t _{on}	—	0.1	—	μS
Storage Time 贮存时间 (V _{CE} =30V, IB1= -IB2=50mA)	t _{stg}	—	1	—	μS
Fall Time 下降时间 (V _{CE} =30V, IB1= -IB2=50mA)	t _f	—	0.1	—	μS

■Dimension 外形封装尺寸



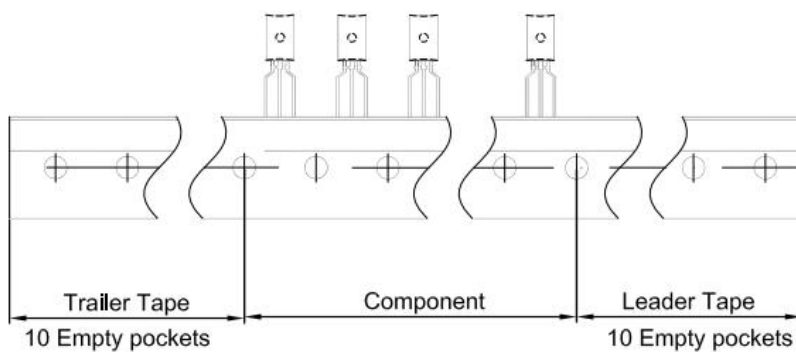
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.750	4.050	0.148	0.159
A1	1.280	1.580	0.050	0.062
b	0.380	0.550	0.015	0.022
b1	0.620	0.780	0.024	0.031
c	0.350	0.450	0.014	0.018
D	4.750	5.050	0.187	0.199
D1	4.000		0.157	
E	7.850	8.150	0.309	0.321
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	13.800	14.200	0.543	0.559
Φ		1.600		0.063
h	0.000	0.300	0.000	0.012

■ Package Taping Dimension 包装编带尺寸



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.9	8.0	3.9	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92L	2000 pcs	333×203×42	20,000 pcs	493×400×264