

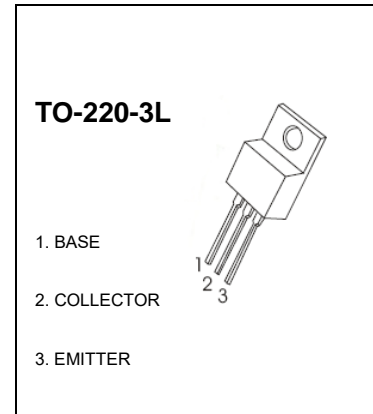


TO-220-3L Plastic-Encapsulate Transistors

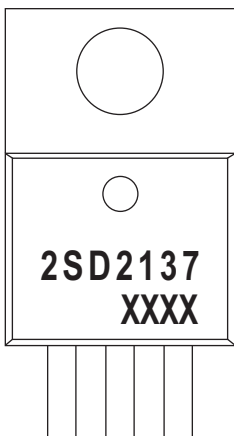
2SD2137 TRANSISTOR (NPN)

FEATURES

- High Forward Current Transfer Ratio h_{FE} which Has Satisfactory Linearity
- Low Collector to Emitter Saturation Voltage $V_{CE(sat)}$
- Allowing Supply with the Radial Taping

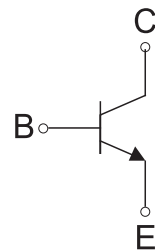


MARKING



2SD2137=Device code
XXXX=Code

Equivalent Circuit



MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_c	Collector Current -Continuous	3	A
P_c	Collector Power Dissipation	2	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	$^{\circ}\text{C}$

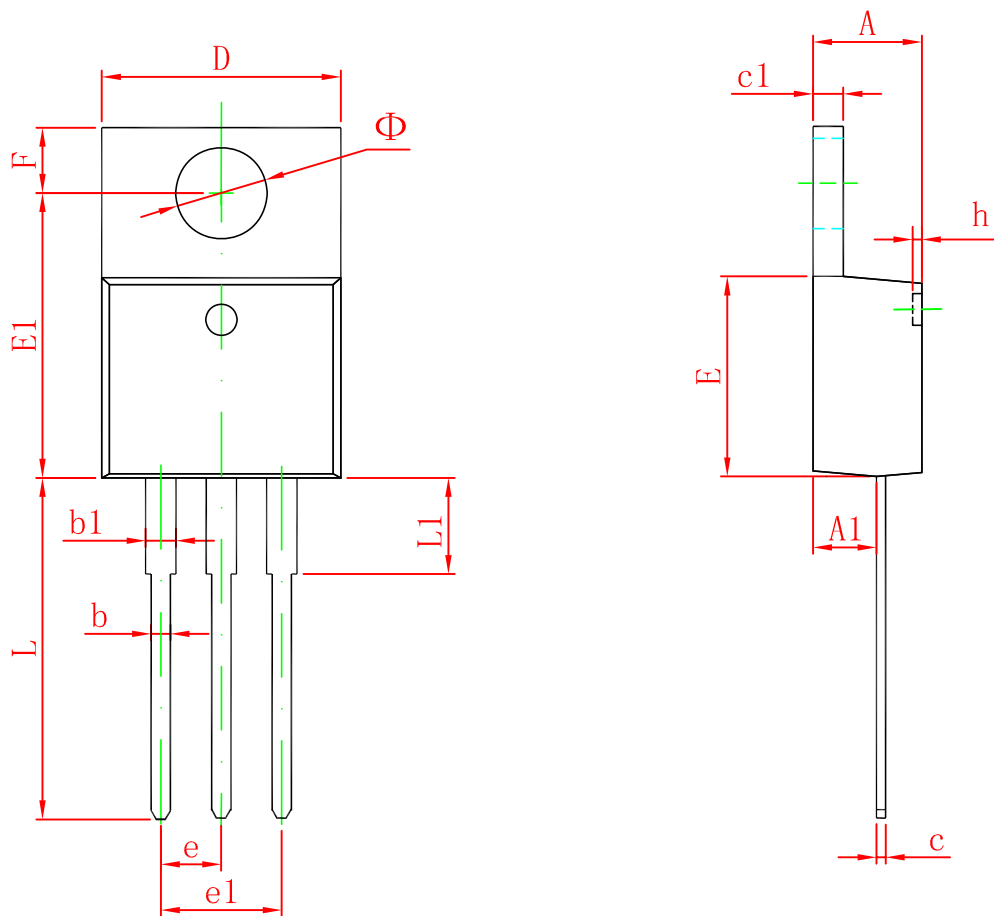
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max		
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =0.1mA, I _E =0	60			V	
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =30mA, I _B =0	60			V	
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =0.1mA, I _C =0	6			V	
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			100	μA	
Emitter cut-off current	I _{EBO}	V _{EB} =6V, I _C =0			100	μA	
DC current gain	h _{FE(1)}	V _{CE} =4V, I _C =1A	70		320		
	h _{FE(2)}	V _{CE} =4V, I _C =3A	10				
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =3A, I _B =375mA			1.2	V	
Base-emitter voltage	V _{BE}	V _{CE} =4V, I _C =3A			1.8	V	
Transition frequency	f _T	V _{CE} =5V, I _C =0.2A, f=10MHz		30		MHz	
Switch time	Turn-on time	t _{on}	V _{CC} =50V, I _C =1A, I _{B1} =-I _{B2} =0.1A		0.3		μs
	Storage time	t _{stg}			2.5		μs
	Fall time	t _f			0.2		μs

CLASSIFICATION OF h_{FE(1)}

Rank	Q	P	O
Range	70-150	120-250	160-320

TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155