



TO-220F Plastic-Encapsulate Transistors

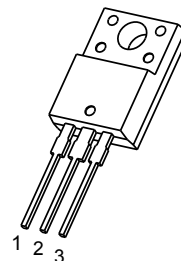
2SD2137 TRANSISTOR (NPN)

FEATURES

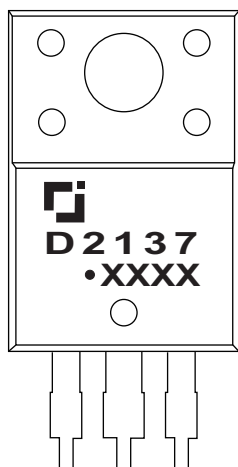
- High Forward Current Transfer Ratio h_{FE} which Has Satisfactory Linearity
- Low Collector to Emitter Saturation Voltage $V_{CE(sat)}$
- Allowing Supply with the Radial Taping

TO-220F

1. BASE
2. COLLECTOR
3. EMITTER



MARKING

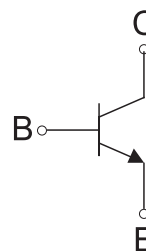


D2137=Device code

Solid dot=Green moldinn compound device,
if none,the normal device

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	$^{\circ}\text{C}$

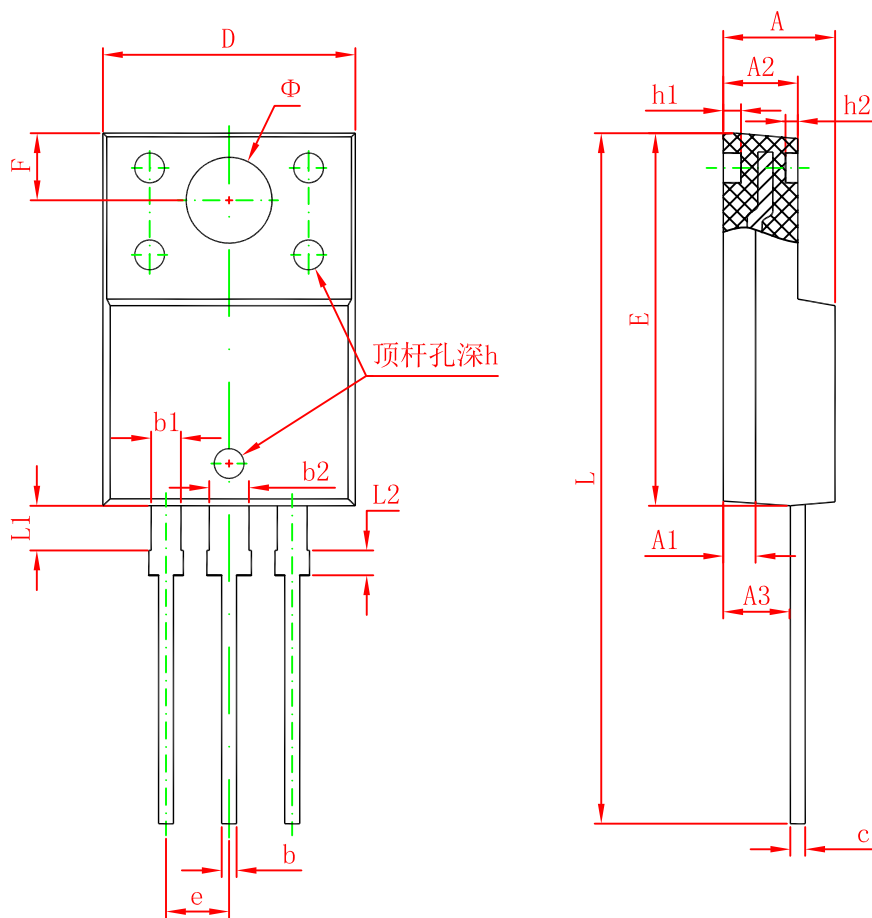
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter		Symbol	Test conditions	Min	Typ	Max	Unit
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
Collector cut-off current		I _{CEO}	V _{CE} =30V, I _B =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-220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.500 REF.		0.138 REF.	
h	0.000	0.300	0.000	0.012
h1	0.800 REF.		0.031 REF.	
h2	0.500 REF.		0.020 REF.	
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	0.900	1.100	0.035	0.043