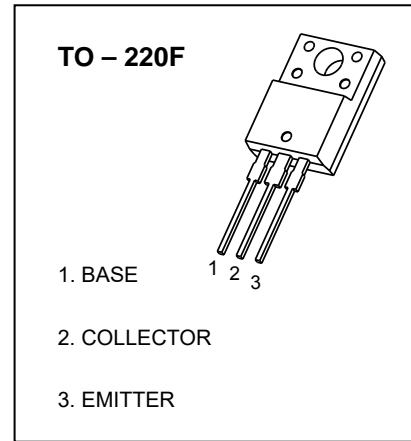


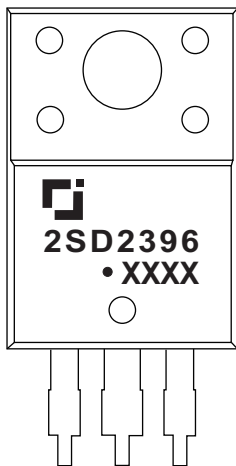
2SD2396 TRANSISTOR (NPN)

FEATURES

- Available in TO-220 F package
- Darling connection provides high dc current gain (h_{FE})
- Large collector power dissipation
- Low frequency and Power amplifier

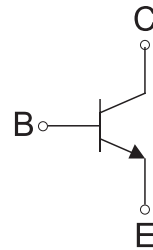


MARKING



2SD2396=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	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	3	A
P_C	Collector Power Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

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

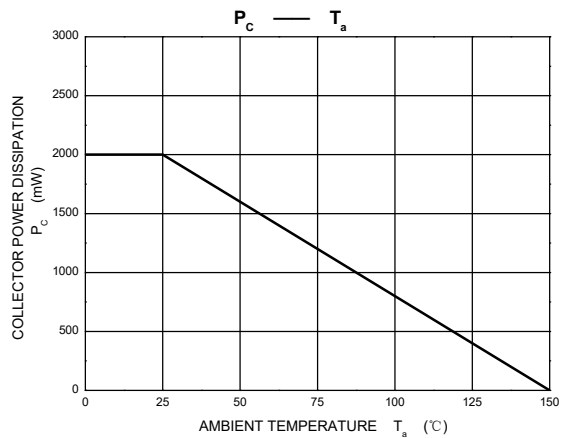
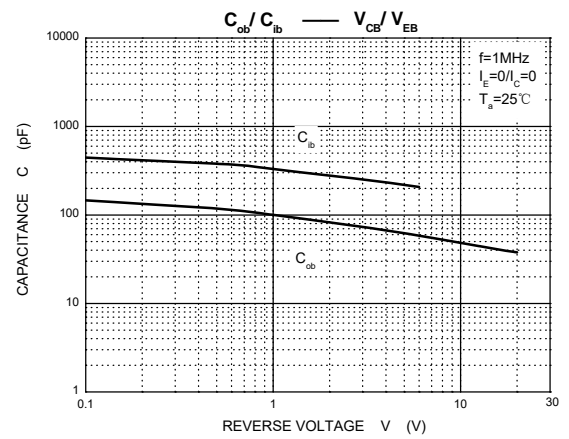
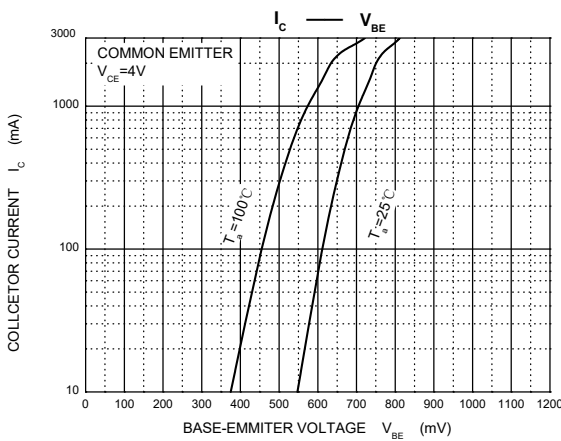
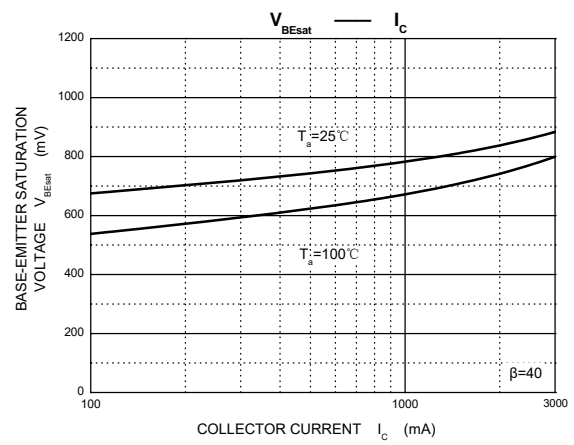
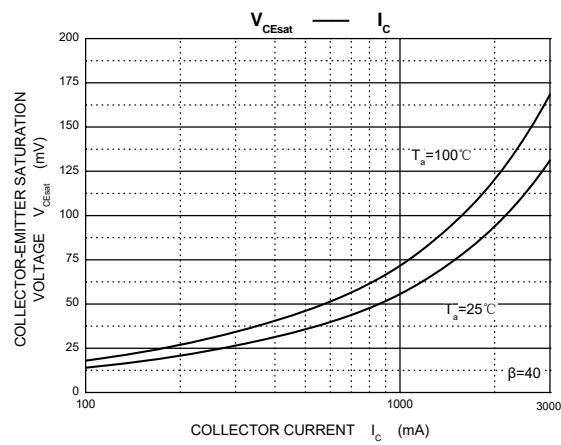
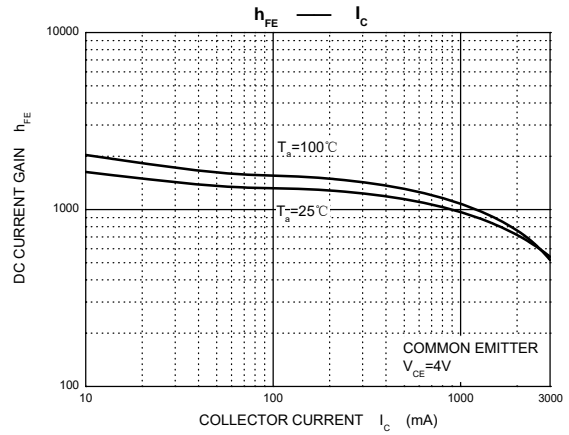
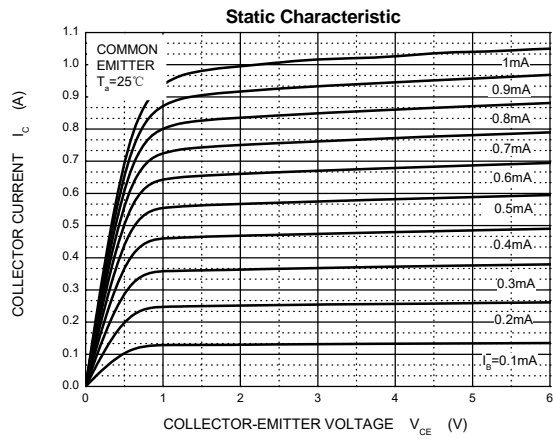
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =50μA, I _E =0	80			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	60			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =50μA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CB} =80V, I _E =0			100	μA
Emitter cut-off current	I _{EBO}	V _{EB} =6V, I _C =0			100	μA
DC current gain	h _{FE} [*]	V _{CE} =4V, I _C =0.5A	400		2000	
Collector-emitter saturation voltage	V _{CE(sat)} [*]	I _C =2A, I _B =50mA			0.8	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =2A, I _B =50mA			1.5	V
Collector output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz		55		pF
Transition frequency	f _T	V _{CE} =5V, I _C =0.2A, f=10MHz		40		MHz

*Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

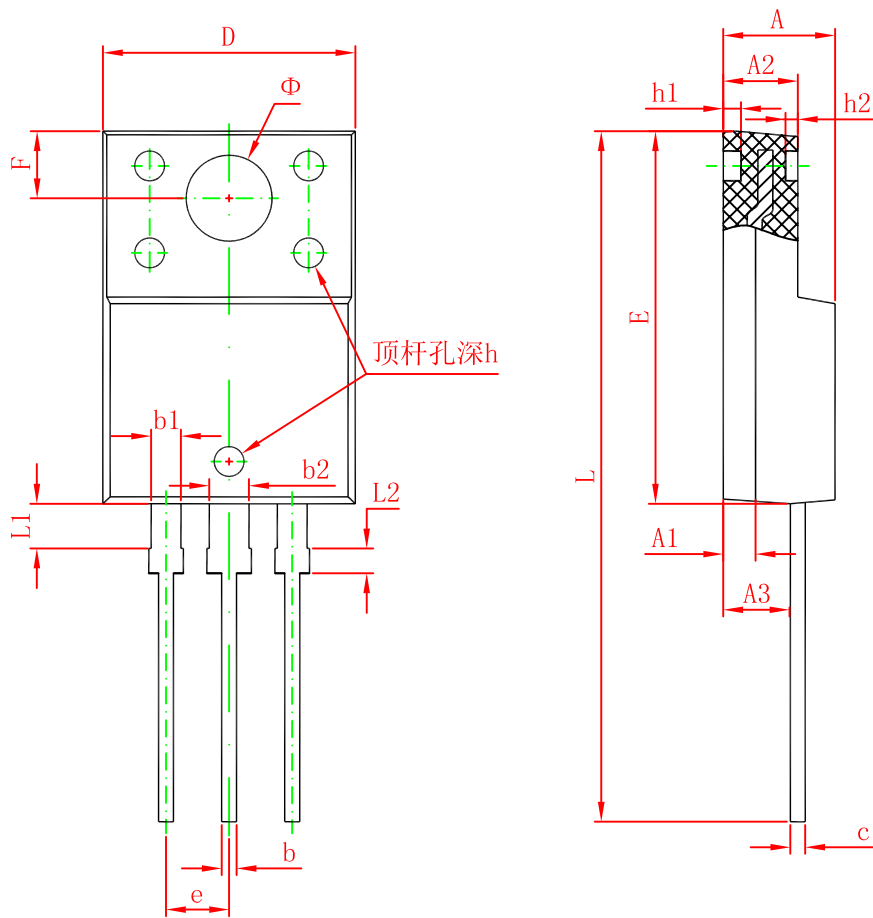
CLASSIFICATION OF h_{FE}^{*}

RANK	H	J	K
RANGE	400-800	600-1200	1000-2000

Typical Characteristics



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

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