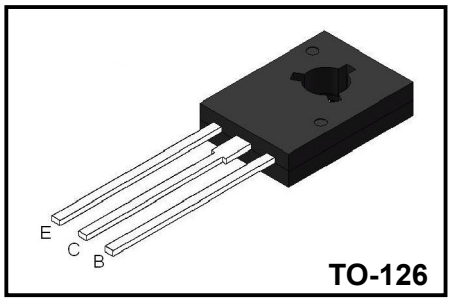
NPN Plastic-Encapsulate Transistors



Applications

➢DC-DC converter

➢Solenoid driver or motor driver

Features

➢Low collecto-emtter r saturation voltage

$V_{CE(sat)}$=0.1V Typ.(@I_C/I_B=2.0A/0.2A

➢Large collector current.

I_C=5.0A,I_{CP}=8.0A

➢Complementary to 2SB1151

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Value	Unit
Collector-Base Voltage		BV_{CBO}	60	V
Collector-Emitter Voltage		BV_{CEO}	60	V
Emitter-Base Voltage		BV_{EBO}	7	V
Collector Curren t(DC)		I_C	5	A
Collector current (pulse)*		I_{CP}	8	A
Collector Power Dissipation	Ta=25°C	P_C	1.3	W
	Tc=25°C		20	W
Junction Temperature		T_j	150	°C
Storage Temperature		T_{stg}	-55～150	°C

* PW≤10ms, duty Cycle≤50%

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	I_C = 100μA，I_E = 0	60			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 10mA，I_B = 0	60			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 100μA，I_C = 0	7			V
Collector cut-off current	I_{CBO}	V_{CB} =50V，I_E = 0			10	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 7V，I_C = 0			10	μA
DC current gain	$h_{FE}1$	V_{CE}= 1V，I_C= 0.1A	60			
	$h_{FE}2$	V_{CE}= 1V，I_C= 2A	100		400	
	$h_{FE}3$	V_{CE}=1V，I_C= 5A	50		160	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 2A，I_B = 0.2A		0.1	0.3	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C = 2A，I_B = 0.2A		0.9	1.2	V

* Pulse test: PW≤50μs, duty Cycle≤2% Pulsed

h_{FE} 2 Classification

Classification	O	Y	G
Range	100~200	160~320	200~400
Marking	YFW 2SD1691 O	YFW 2SD1691 Y	YFW 2SD1691 G

Typical Characteristics

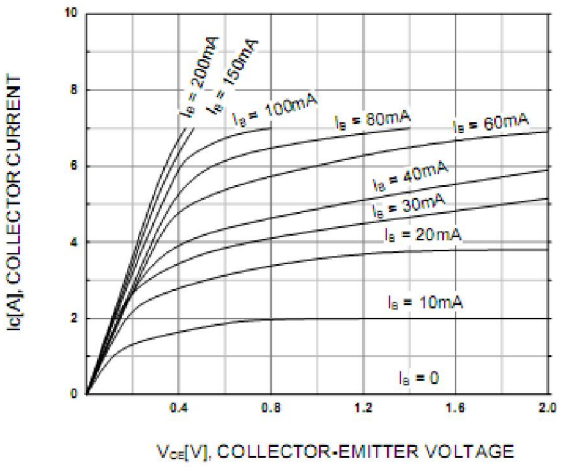


Figure 1. Static Characteristic

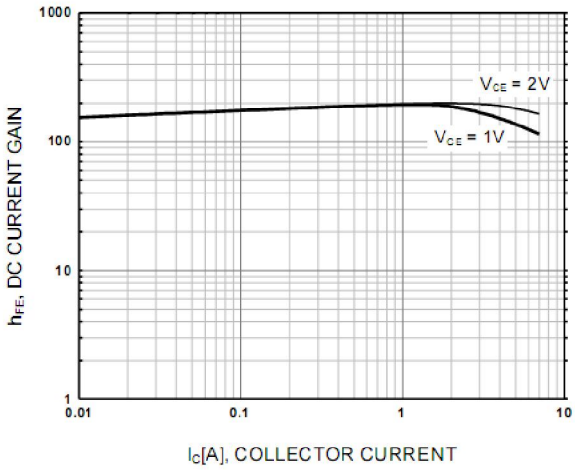


Figure 2. DC current Gain

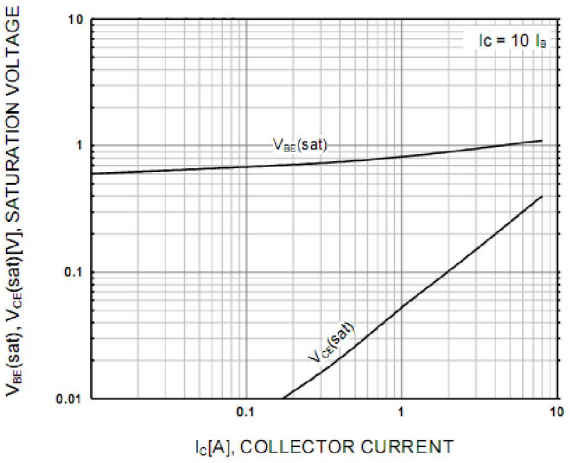


Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

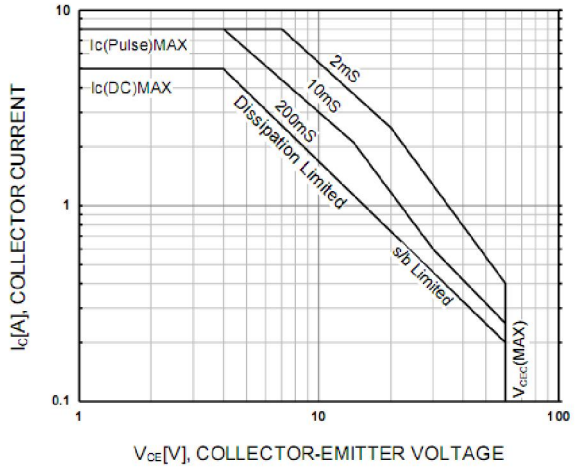


Figure 4. Forward Bias Safe Operating Area

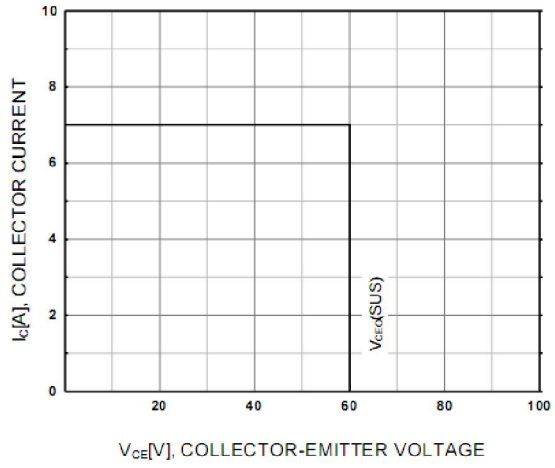


Figure 5. Reverse Bias Safe Operating Area

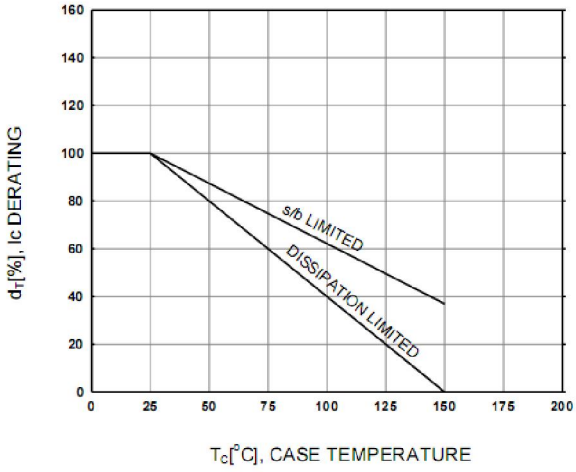


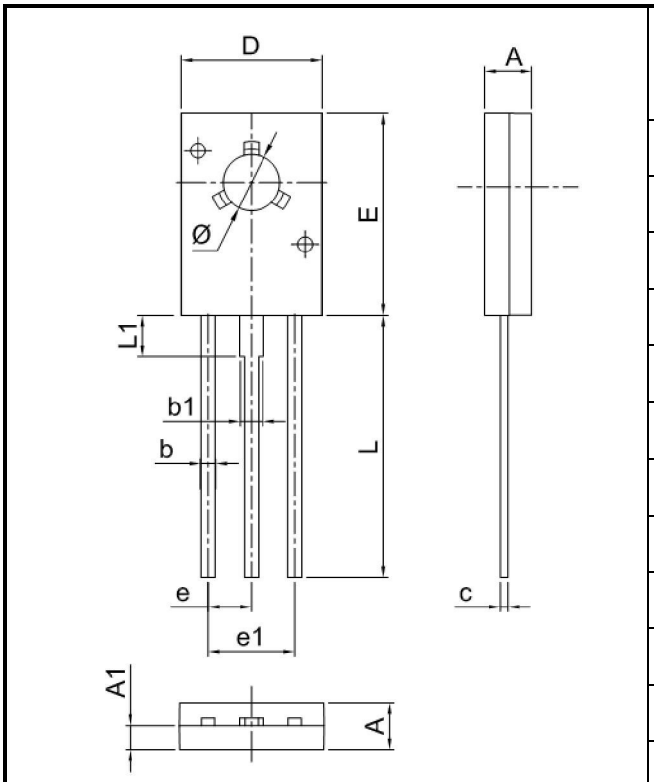
Figure 6. Derating Curve of Safe Operating Areas

Ordering information

Package	Packing Description	Base Quantity
TO-126	Bulk	500pcs/Bag

Package Dimensions

TO-126



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.80	0.094	0.110
A1	1.00	1.40	0.039	0.055
b	0.66	0.86	0.026	0.034
b1	1.17	1.37	0.046	0.054
c	0.40	0.60	0.016	0.024
D	7.30	7.70	0.287	0.303
E	10.60	11.00	0.417	0.433
e	2.25	2.33	0.089	0.092
e1	4.50	4.66	0.177	0.183
L	14.00	15.00	0.551	0.591
L1	1.90	2.50	0.075	0.098
Φ	3.10	3.30	0.122	0.130

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