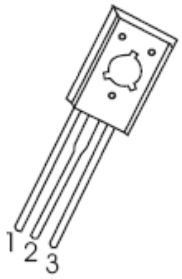
TO-126

1. EMITTER
2. COLLECTOR
3 . BASE



FEATURES

- High current output up to 3A
- Low saturation voltage
- Complement to MJE172

GK xxx
MJE182

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Rating (T_C=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Collector-Base Voltage		BV_{CBO}	100	V
Collector-Emitter Voltage		BV_{CEO}	80	V
Emitter-Base Voltage		BV_{EBO}	7	V
Collector Current (DC)		I_C	3	A
Collector Current (Pulse)		I_{CP}	6	A
Power Dissipation	T_A=25℃	P_C	1.5	W
	T_C=25℃		12.5	
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	-55～150	℃

ELECTRICAL CHARACTERISTICS(Tc=25℃ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C = 100μA，I_E = 0	100			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA，I_B = 0	80			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 100μA，I_C = 0	7			V
Collector cut-off current	I_{CBO}	V_{CB} =100V，I_B = 0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 7V，I_C = 0			0.1	μA
DC current gain*	h_{FE}	V_{CE}=1V，I_C= 100mA V_{CE}=1V，I_C= 500mA V_{CE}=1V，I_C= 1.5A	50 30 12		250	
Collector-emitter saturation voltage*	$V_{CE(sat)}$	I_C = 500mA，I_B = 50mA I_C = 1.5A，I_B = 150mA I_C = 3A，I_B = 600mA			0.3 0.9 1.7	V
Base-emitter saturation voltage*	$V_{BE(sat)}$	I_C = 1.5A，I_B = 150mA I_C = 3A，I_B = 600mA			1.5 2.0	V
Base-emitter on voltage*	$V_{BE(on)}$	V_{CE}=1V，I_C= 500mA			1.2	V
Transition frequency	f_T	V_{CE} = 10V，I_B = 100mA	50			MHz
Output Capacitance	C_{ob}	V_{CB} = 10V,I_E = 0,f=1MHz			30	pF

* Pulse test: PW≤300μs, duty cycle≤2% Pulse

RATING AND CHARACTERISTIC CURVES

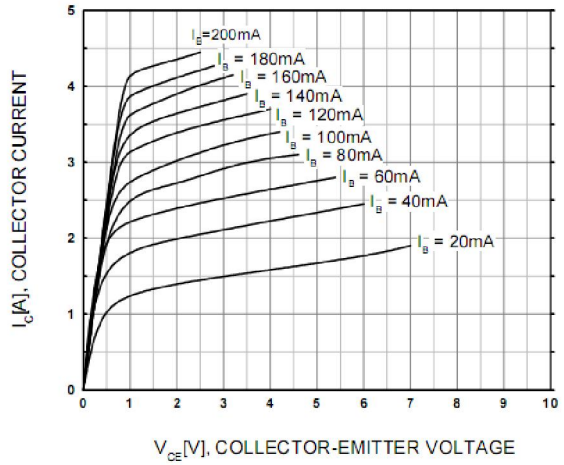


Figure 1. Static Characteristic

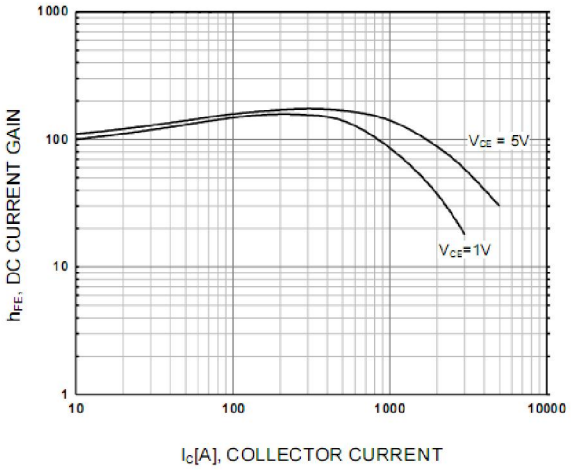


Figure 2. DC current Gain

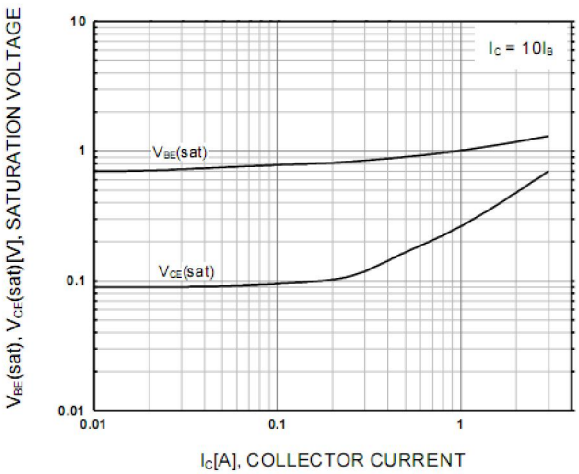


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

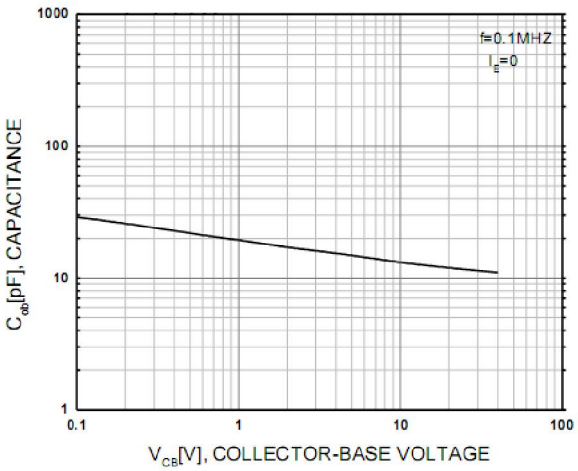


Figure 4. Collector Output Capacitance

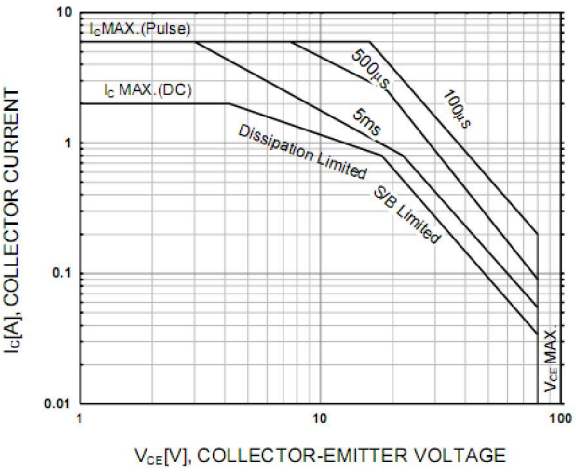


Figure 5. Safe Operating Area

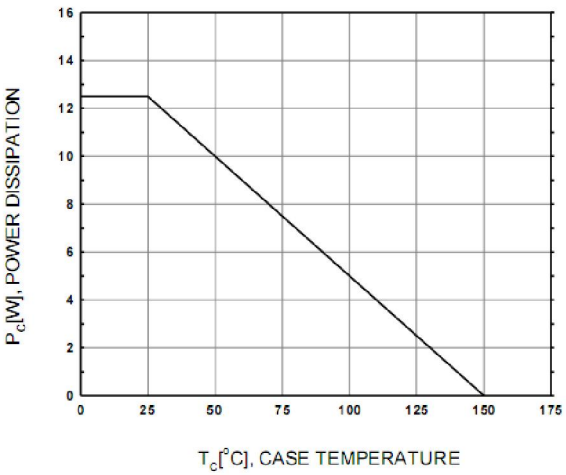
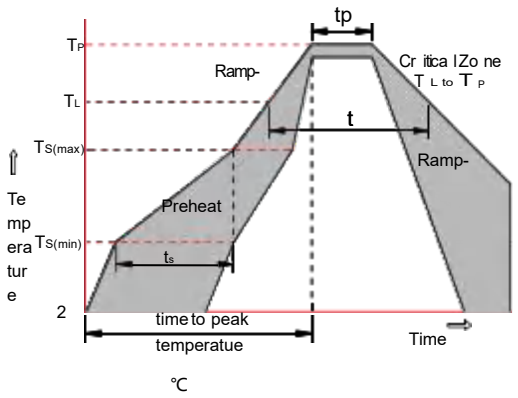


Figure 6. Power Derating

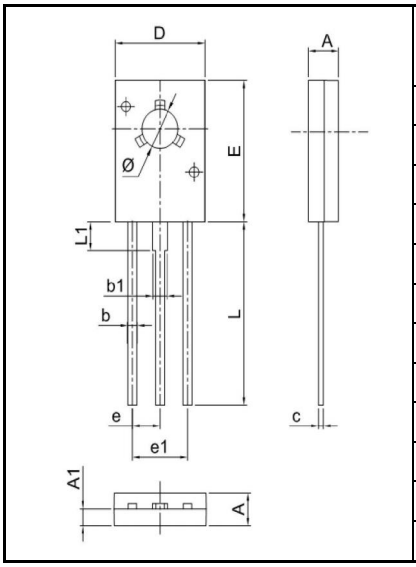
Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout



Dim	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