

FEATURES

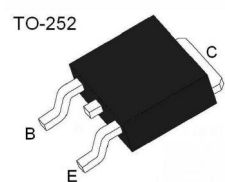
- Low collector-emitter saturation voltage
- Fast switching speed
- The complementary are MJD45H11



LOGO GK XXX CODE

APPLICAITONS

- Power amplifier
- Switching circuits



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Collector-base voltage		BV_{CBO}	100	V
Collector-emitter voltage		BV_{CEO}	80	V
Emitter-base voltage		BV_{EBO}	5	V
Collector current (DC)		I_C	8	A
Collector current Pulse		I_{CP}	16	A
Collector power dissipation	$T_a=25^{\circ}\text{C}$	P_C	1.75	W
	$T_C=25^{\circ}\text{C}$		20	
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature		T_{stg}	-65~150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	100			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 10mA, I_B = 0$	80			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 80V, V_{BE} = 0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			50	μA
DC current gain *	h_{FE}	$V_{CE} = 1V, I_C = 2A$ $V_{CE} = 1V, I_C = 4A$	60 40			
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 8A, I_B = 0.4A$			1	V
Base-emitter saturation voltage*	$V_{BE(sat)}$	$I_C = 8A, I_B = 0.8A$			1.5	V
Transition frequency	f_T	$V_{CE} = 10V, I_B = 0.5A$		50		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		130		pF

* Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 2%

RATING AND CHARACTERISTIC CURVES

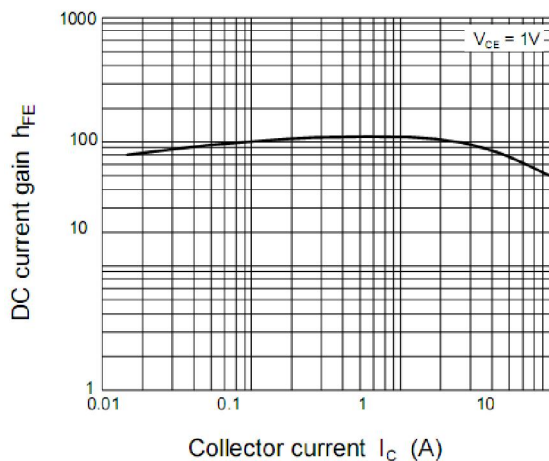


Figure 1. DC current Gain

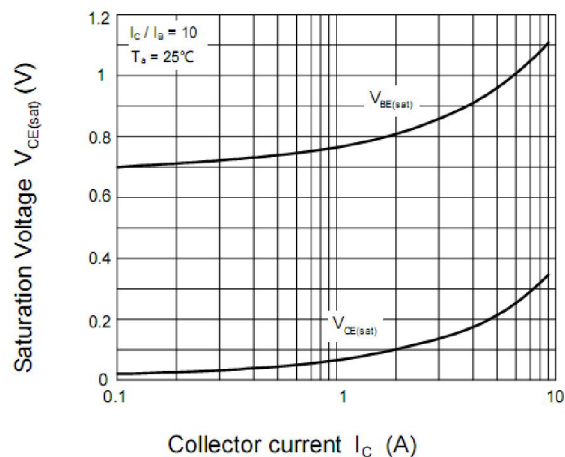


Figure 2 . Saturation Voltage

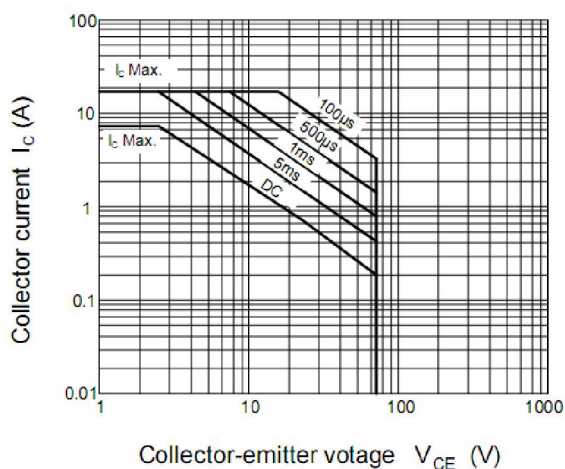


Figure 3. Safe Operating Area

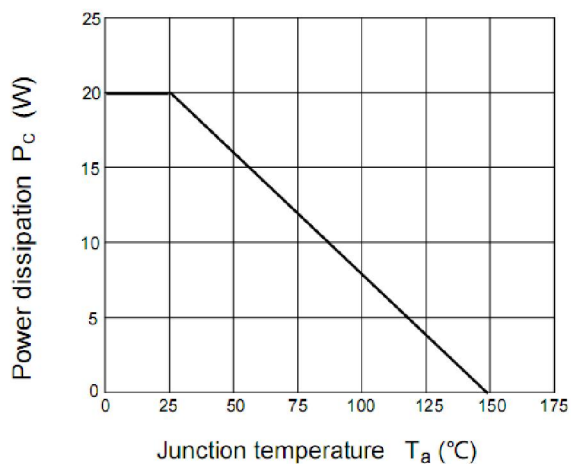
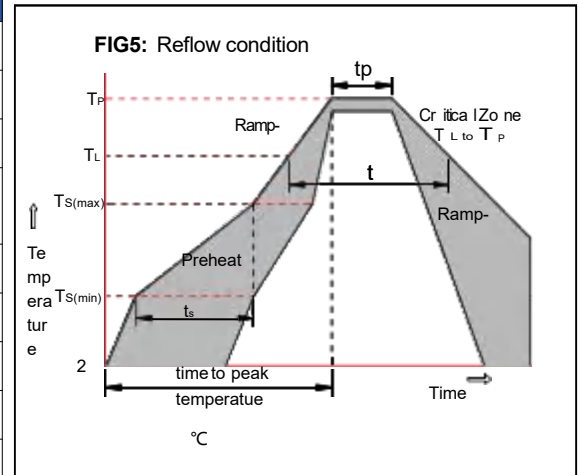


Figure 4. Power Derating

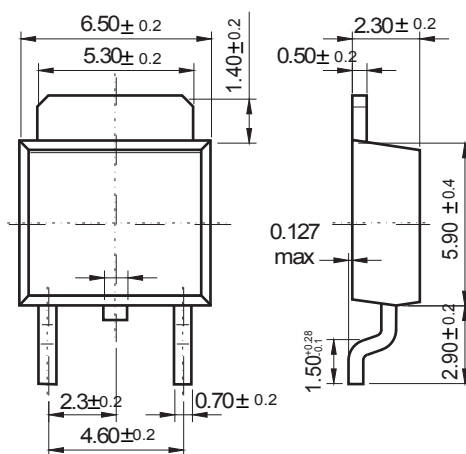
Soldering parameters

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

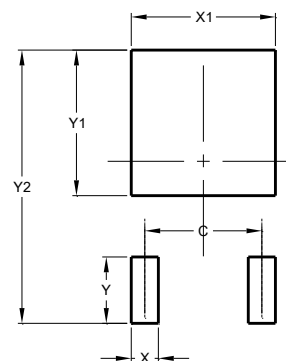


Package Dimensions & Suggested Pad Layout

TO-252



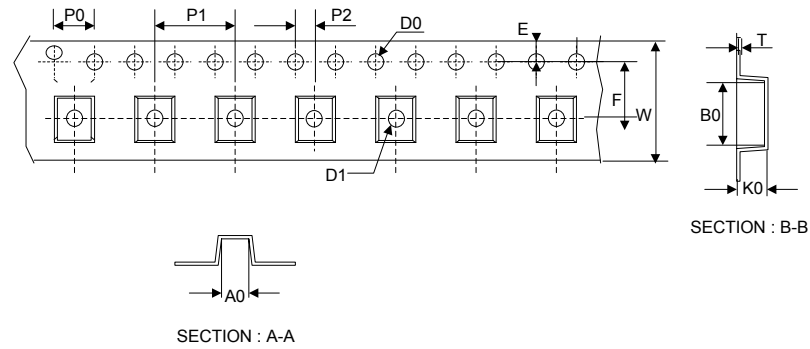
Dimensions in inches and (millimeters)



Dimensions	Value (in mm)
C	4.55
X	1.50
X1	5.80
Y	2.70
Y1	6.00
Y2	10.90

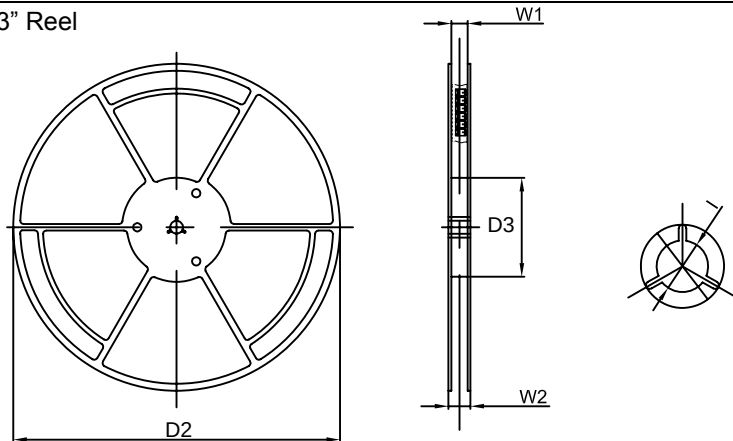
Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
D0	1.55±0.15
D1	1.55±0.20
E	1.75±0.20
F	7.50±0.20
W	16.00±0.20
A0	7.10±0.20
B0	10.50±0.20
K0	2.70±0.20
T	0.30±0.10
D2	330.0±5.0
D3	100.0±4.0
W1	20.0±5.0
W2	25.0±5.0
I	13.0±2.0

13" Reel



Quantity: 2500PCS