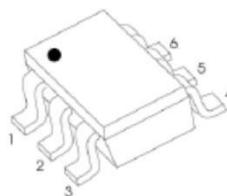


Features

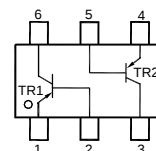
for high voltage amplifier applications.

K4M

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Equivalent Circuit



1. Emitter 2. Base 3. Collector
4. Emitter 5. Base 6. Collector

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	160	V
Collector Emitter Voltage	$-V_{CEO}$	150	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current Continuous	$-I_C$	600	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at $-V_{CE} = 5\text{ V}$, $-I_C = 1\text{ mA}$	h_{FE}	50	-	-
at $-V_{CE} = 5\text{ V}$, $-I_C = 10\text{ mA}$	h_{FE}	60	240	-
at $-V_{CE} = 5\text{ V}$, $-I_C = 50\text{ mA}$	h_{FE}	50	-	-
Collector Base Cutoff Current at $-V_{CB} = 120\text{ V}$	$-I_{CBO}$	-	50	nA
Emitter Base Cutoff Current at $-V_{EB} = 3\text{ V}$	$-I_{EBO}$	-	50	nA
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	160	-	V
Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	150	-	V
Emitter Base Breakdown Voltage at $-I_E = 10\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $-I_C = 10\text{ mA}$, $-I_B = 1\text{ mA}$ at $-I_C = 50\text{ mA}$, $-I_B = 5\text{ mA}$	$-V_{CE(sat)}$	- -	0.2 0.5	V
Base Emitter Saturation Voltage at $-I_C = 10\text{ mA}$, $-I_B = 1\text{ mA}$ at $-I_C = 50\text{ mA}$, $-I_B = 5\text{ mA}$	$-V_{BE(sat)}$	- -	1 1	V
Gain Bandwidth Product at $-V_{CE} = 10\text{ V}$, $-I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	100	300	MHz
Output Capacitance at $-V_{CB}=10\text{ V}$, $f = 1\text{ MHz}$	C_{obo}	-	6	pF

RATING AND CHARACTERISTIC CURVES

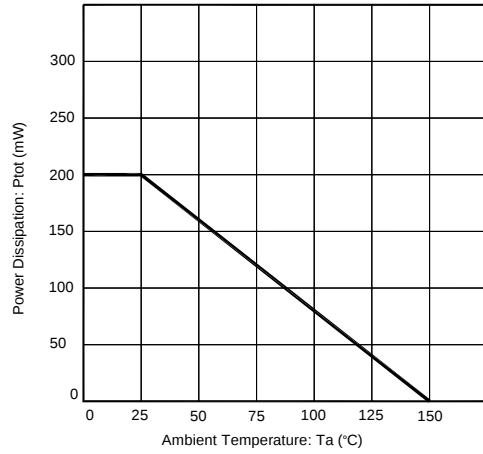


Fig.1 Max Power Dissipation vs Ambient Temperature

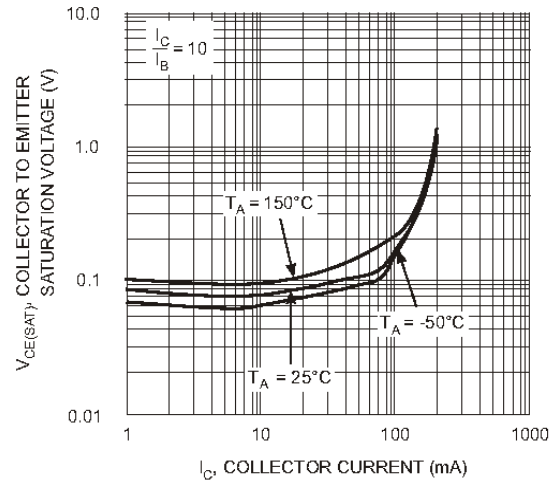


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

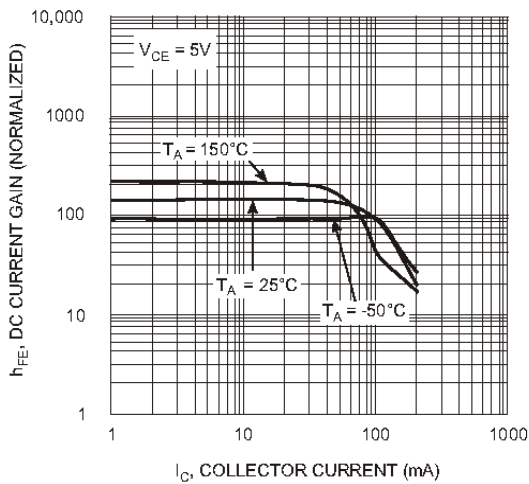


Fig. 3, DC Current Gain vs. Collector Current

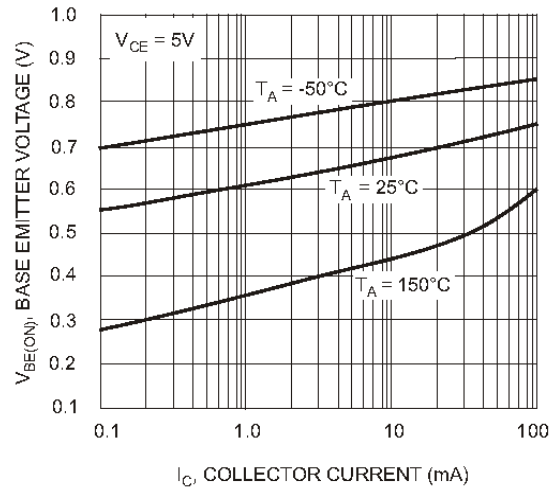


Fig. 4, Base Emitter Voltage vs. Collector Current

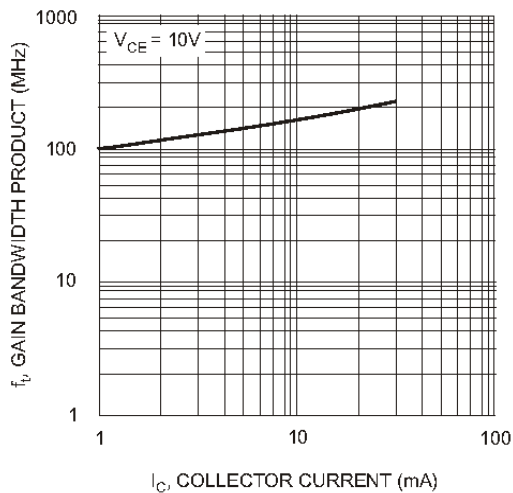
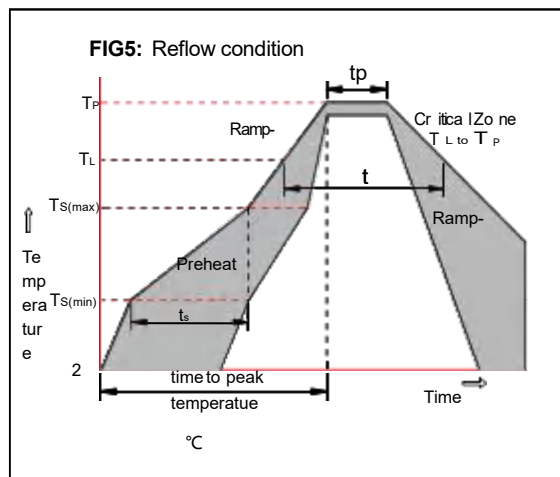


Fig. 5, Gain Bandwidth Product vs Collector Current

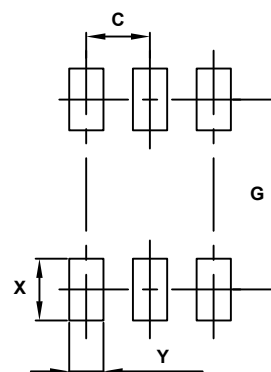
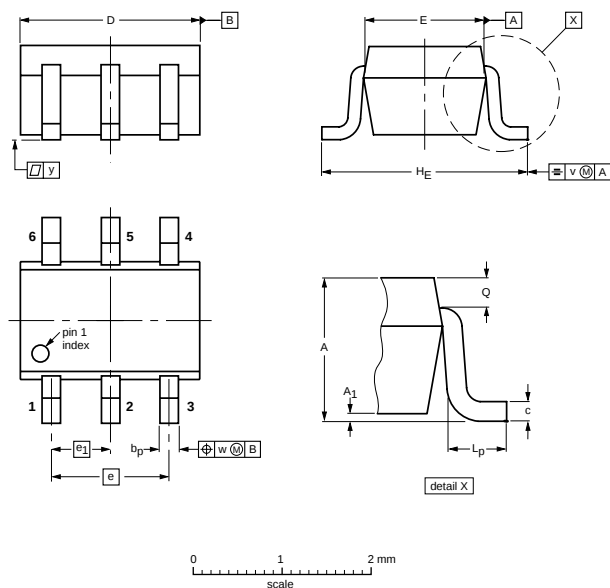
Soldering parameters

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

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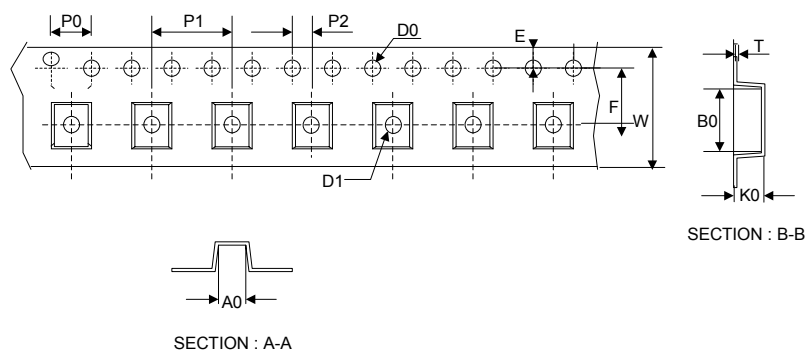
Dimensions	Value (in mm)
C	0.65
G	1.90
X	0.85
Y	0.40

DIMENSIONS (mm are the original dimensions)

UNIT	A	A1 max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

Tape & reel specification

Tape



Symbol	Dimension (mm)
--------	----------------

P0	4.00±0.20
----	-----------

P1	4.00±0.20
----	-----------

P2	2.00±0.20
----	-----------

D0	1.55±0.20
----	-----------

D1	1.00±0.20
----	-----------

E	1.55±0.25
---	-----------

F	3.60±0.20
---	-----------

W	8.00±0.20
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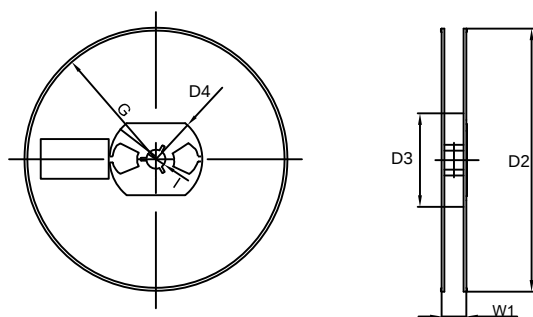
A0	3.00±0.20
----	-----------

B0	3.00±0.20
----	-----------

K0	1.30±0.20
----	-----------

T	0.20±0.20
---	-----------

7" Reel



D2	177.0±5.0
----	-----------

D3	55Min.
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D4	R24.6±2.0
----	-----------

G	R82.0±2.0
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I	13.0±2.0
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W1	10.20±3.0
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Quantity: 3000PCS