Silicon NPN Power Transistor

2N5240



TO-3

TO-3
Metal Can Package
RoHS compliant

DESCRIPTION:

1. High Voltage : $V_{CEO(SUS)}$= 300V(Min)
2. Wide Area of Safe Operation

APPLICATION: Designed for use in series regulators, power amplifiers, inverters, deflection circuits, switching regulators, and high-voltage bridge amplifiers.

ABSOLUTE MAXIMUM RATINGS (Ta = 25 ℃ Unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	375	V
Collector-Emitter Voltage R_{BE}≤50Ω	$V_{CER(SUS)}$	350	V
Collector-Emitter Voltage	$V_{CEO(SUS)}$	300	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current-Continuous	I_C	5	A
Base Current	I_B	2	A
Collector Power Dissipation @ T_C=25°C	P_C	100	W
Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

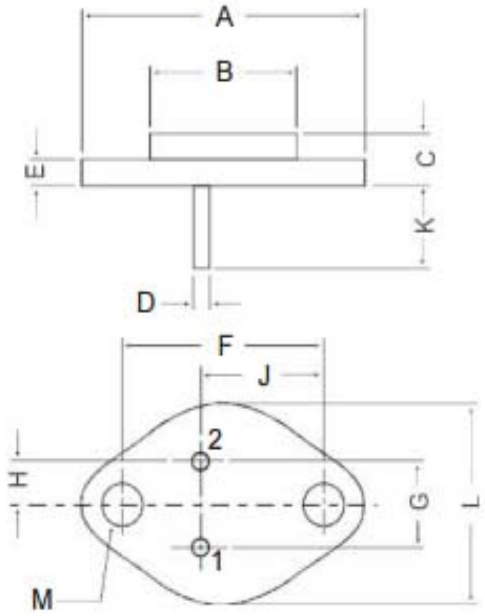
Thermal Resistance,Junction to Case	$R_{th\ j\text{-}c}$	1.75	°C/W

ELECTRICAL CHARACTERISTICS at (Ta = 25 ℃ Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	I_C= 0.2A ;I_B= 0	300	--	--	V
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	I_C= 0.2A ;R_{BE}≤ 50Ω	350	--	--	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E= 0.02A; I_C= 0	6	--	--	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)-1}$	I_C= 2A; I_B= 0.25A	--	--	2.5	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)-2}$	I_C= 4.5A; I_B= 1.125A	--	--	5.0	V
Base-Emitter On Voltage	$V_{BE(on)}$	I_C= 2A ; V_{CE}= 10V	--	--	3.0	V
Collector Cutoff Current	I_{CEV}	V_{CE}=375V; V_{BE}= -1.5V	--	--	2	mA
		V_{CE}=300V; V_{BE}= -1.5V;T_C= 150°C	--	--	3	
Collector Cutoff Current	I_{CEO}	V_{CE}= 200V; I_B= 0	--	--	2	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}= 6V; I_C=0	--	--	5	mA
DC Current Gain	h_{FE-1}	I_C= 0.4A; V_{CE}= 10V	20	--	80	--
DC Current Gain	h_{FE-2}	I_C= 2A; V_{CE}= 10V	20	--	80	--
DC Current Gain	h_{FE-3}	I_C= 4.5A; V_{CE}= 10V	5	--	--	--
Current-Gain—Bandwidth Product	f_T	I_C= 0.2A; V_{CE}= 10V	2	--	--	MHz
Output Capacitance	C_{OB}	I_E= 0; V_{CB}= 10V; f_{test}= 1.0MHz	--	--	250	pF

PACKAGE DETAILS

TO-3 Metal Can Plastic package

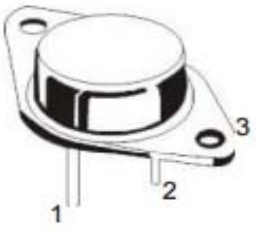


DIM	MIN.	MAX.
A	—	39.37
B	—	22.22
C	6.35	8.50
D	0.96	1.09
E	—	1.77
F	29.90	30.40
G	10.69	11.18
H	5.20	5.72
J	16.64	17.15
K	11.15	12.25
L	—	26.67
M	3.84	4.19

Dimensions are in mm

PIN CONFIGURATION

1. Base
2. Emitter
3. Collector



Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	GrWt
TO-3	100 pcs/pkt	1.3 kg/100 pcs	12.5" x 8" x 1.8"	0.1K	17" x 11.5" x 21"	2K	27.5 kgs

Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

Shelf Life of CDIL Products

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.
If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.
The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

Floor Life of CDIL Products and MSL Level

When the products are opened from the original packing, the floor life will start.
For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	**Time**	**Condition**
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH

Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving /support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).
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