

# NPN Power Silicon Transistor

## 2N5240



### Features

- High Voltage:  $V_{ce(sus)} = 300\text{ V (min)}$
- Wide Area of Safe Operation
- Designed for use in series regulators, power amplifiers, inverters, deflection circuits, switching regulators, and high-voltage bridge amplifiers.
- TO-3 (TO-204AA) Package



### Maximum Ratings ( $T_A = 25\text{ }^\circ\text{C}$ )

Ratings	Symbol	Value	Units
Collector - Base Voltage	$V_{CBO}$	375	Vdc
Collector - Emitter Voltage ( $R_{BE} < 50\ \Omega$ )	$V_{CER(sus)}$	350	Vdc
Collector - Emitter Voltage	$V_{CE0(sus)}$	300	Vdc
Emitter - Base Voltage	$V_{EBO}$	6.0	Vdc
Collector Current - Continuous	$I_C$	5	Adc
Base Current	$I_B$	2	Adc
Collector Power Dissipation	$P_C$	100	W
Junction Temperature	$T_J$	+200	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to +200	$^\circ\text{C}$

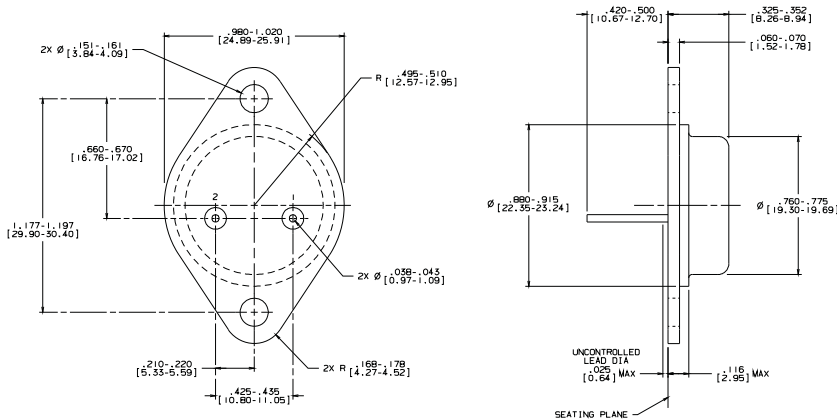
### Electrical Characteristics

$T_C = 25^\circ\text{C}$  unless otherwise specified

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Units
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 0.2\text{ A}; I_B = 0$	300	--	--	V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 0.2\text{ A}; R_{BE} \leq 50\ \Omega$	350	--	--	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 0.02\text{ A}; I_C = 0$	6	--	--	V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{ A}; I_B = 0.25\text{ A}$	--	--	2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 4.5\text{ A}; I_B = 1.125\text{ A}$	--	--	5.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 2\text{ A}; V_{CE} = 10\text{ V}$	--	--	3.0	V
$I_{CEV}$	Collector Cutoff Current	$V_{BE} = 375\text{ V}; V_{BE} = -1.5\text{ V}$ $V_{BE} = 300\text{ V}; V_{BE} = -1.5\text{ V}; T_C = 150^\circ\text{C}$	--	--	2 3	mA
$I_{CEO}$	Collector Cutoff Current	$V_{BE} = 200\text{ V}; I_B = 0$	--	--	2	mA
$I_{ESO}$	Emitter Cutoff Current	$V_{BE} = 6\text{ V}; I_C = 0$	--	--	5	mA
$I_{S/B}$	Forward Bias, Second Breakdown Collector Current	$t_p = 1\text{ sec}, V_{CE} = 100\text{ Vdc}$	0.8	--	--	A
$h_{fe}$	AC Forward Current Transfer Ratio	$F = 1\text{ KHz}; V_{CE} = 10\text{ Vdc}, I_C = 0.4\text{ A}$	20	--	--	
$h_{Fe-1}$	DC Current Gain	$I_C = 0.4\text{ A}; V_{CE} = 10\text{ V}$	20	--	80	
$h_{Fe-2}$	DC Current Gain	$I_C = 2\text{ A}; V_{CE} = 10\text{ V}$	20	--	80	
$h_{Fe-3}$	DC Current Gain	$I_C = 4.5\text{ A}; V_{CE} = 10\text{ V}$	5	--	--	
$f_T$	Current-Gain - Bandwidth Product	$I_C = 0.2\text{ A}; V_{CE} = 10\text{ V}$	2	--	--	MHz
$C_{OB}$	Output Capacitance	$I_E = 0; V_{CB} = 10\text{ V}; f_{test} = 1.0\text{ MHz}$	--	--	250	pF



Outline Drawing



- NOTES:
1. STANDARD HEADER TYPE SOLID BASE.
  2. STANDARD LEAD FINISH PER MIL-M-38510 TYPE X OR EQUIVALENT.
  3. LEAD NOT BENT GREATER THAN 15°.
  4. DIMENSIONS BASED ON JEDEC STANDARD TO-3 PUBLICATION 95, PA

**Aeroflex / Metelics, Inc.**

975 Stewart Drive,  
Sunnyvale, CA 94085  
Tel: (408) 737-8181  
Fax: (408) 733-7645

Sales: 888-641-SEMI (7364)

**Hi-Rel Components**

9 Hampshire Street,  
Lawrence, MA 01840  
Tel: (603) 641-3800  
Fax: (978) 683-3264

[www.aeroflex.com/metelicsHRC](http://www.aeroflex.com/metelicsHRC)

54 Grenier Field Road,  
Londonderry, NH 03053  
Tel: (603) 641-3800  
Fax: (603)-641-3500

**ISO 9001: 2008 certified companies**

[www.aeroflex.com/metelics](http://www.aeroflex.com/metelics)      [metelics-sales@eroflex.com](mailto:metelics-sales@eroflex.com)

Aeroflex / Metelics, Inc. reserves the right to make changes to any products and services herein at any time without notice. Consult Aeroflex or an authorized sales representative to verify that the information in this data sheet is current before using this product. Aeroflex does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by Aeroflex; nor does the purchase, lease, or use of a product or service from Aeroflex convey a license under any patent rights, copyrights, trademark rights, or any other of the intellectual rights of Aeroflex or of third parties.

Copyright 2011 Aeroflex / Metelics. All rights reserved.



Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.