

# NPN Triple Diffused Planar Silicon Transistor

## FJL6920

### Features

- High Collector–Base Breakdown Voltage:  $BV_{CBO} = 1700\text{ V}$
- Low Saturation Voltage:  $V_{CE(sat)} = 3\text{ V (Max.)}$
- For Color Monitor
- These Devices are Pb–Free, Halide Free and are RoHS Compliant

### Applications

- High Voltage Color Display Horizontal Deflection Output

### ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

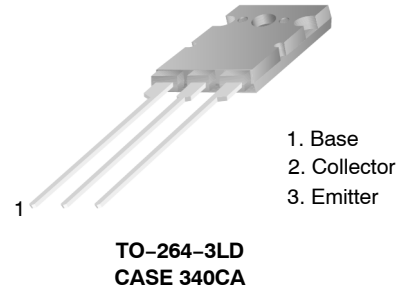
Parameter	Symbol	Rating	Units
Collector–Base Voltage	$V_{CBO}$	1700	V
Collector–Emitter Voltage	$V_{CEO}$	800	V
Emitter–Base Voltage	$V_{EBO}$	6	V
Collector Current (DC)	$I_C$	20	A
Collector Current (Pulse) *	$I_{CP}$	30	A
Collector Dissipation	$P_C$	200	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_J, T_{STG}$	$-55 \sim 150$	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

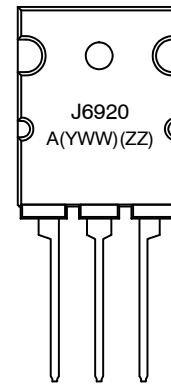
\*Pulse Test:  $PW = 300\text{ }\mu\text{s}$ , Duty Cycle = 2% Pulsed

### THERMAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Max.	Units
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.625	$^\circ\text{C/W}$



### MARKING DIAGRAM



J6920 = Specific Device Code  
A = Assembly Site  
Y = Year of Production, Last Number  
WW = Work Week Number  
ZZ = Assembly Lot Number, Last Two Numbers

### ORDERING INFORMATION

Device	Package	Shipping
FJL6920TU	TO-264-3LD	375 Units / Tube

# FJL6920

## ELECTRICAL CHARACTERISTICS (Note 1) ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
$I_{CES}$	Collector Cut-Off Current	$V_{CB} = 1400\text{ V}, R_{BE} = 0$			1	mA
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = 800\text{ V}, I_E = 0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = 4\text{ V}, I_C = 0$			1	mA
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 500\text{ }\mu\text{A}, I_E = 0$	1700			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 5\text{ mA}, I_B = 0$	800			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 500\text{ }\mu\text{A}, I_C = 0$	6			V
$h_{FE1}$	DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	8			
$h_{FE2}$	DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 11\text{ A}$	5.5		8.5	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 11\text{ A}, I_B = 2.75\text{ A}$			3	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 11\text{ A}, I_B = 2.75\text{ A}$			1.5	V
$t_{STG}$	Storage Time (Note 1)	$V_{CC} = 200\text{ V}, I_C = 10\text{ A}, R_L = 20\text{ }\Omega$ , $I_{B1} = 2.0\text{ A}, I_{B2} = -4.0\text{ A}$			3	$\mu\text{s}$
$t_F$	Fall Time (Note 1)	$V_{CC} = 200\text{ V}, I_C = 10\text{ A}, R_L = 20\text{ }\Omega$ , $I_{B1} = 2.0\text{ A}, I_{B2} = -4.0\text{ A}$		0.15	0.2	$\mu\text{s}$

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. Pulse Test: PW = 20  $\mu\text{s}$ , Duty Cycle = 1% Pulsed

## TYPICAL CHARACTERISTICS

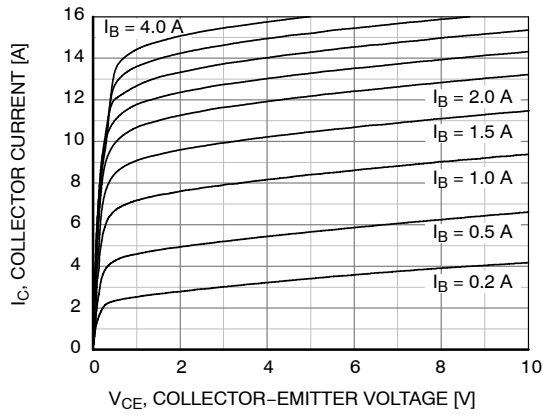


Figure 1. Static Characteristic

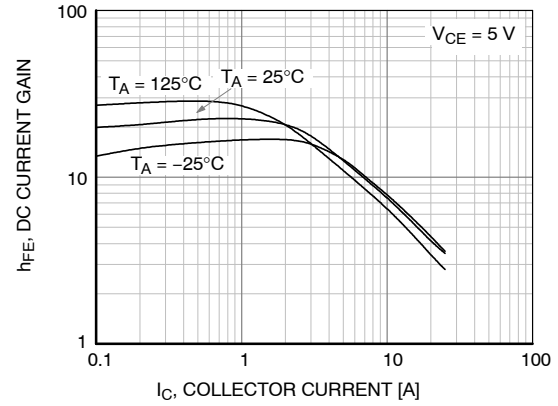


Figure 2. DC Current Gain

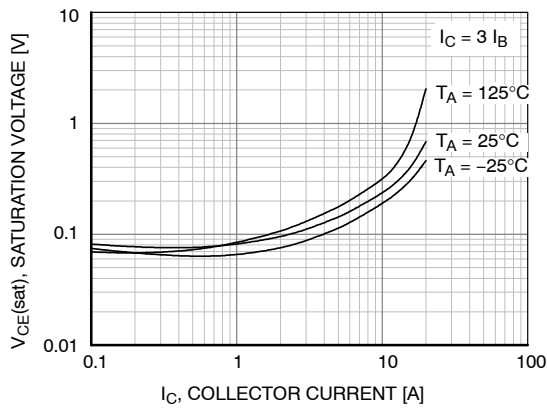


Figure 3. Collector-Emitter Saturation Voltage

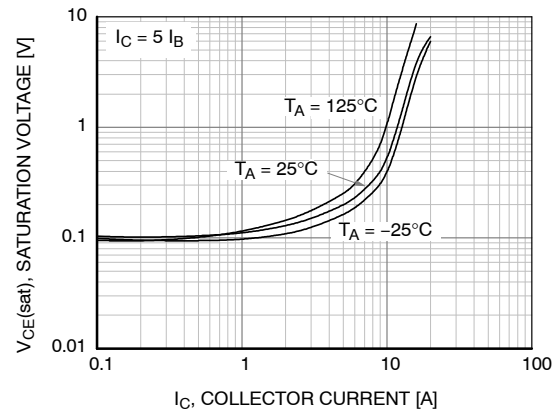


Figure 4. Collector-Emitter Saturation Voltage

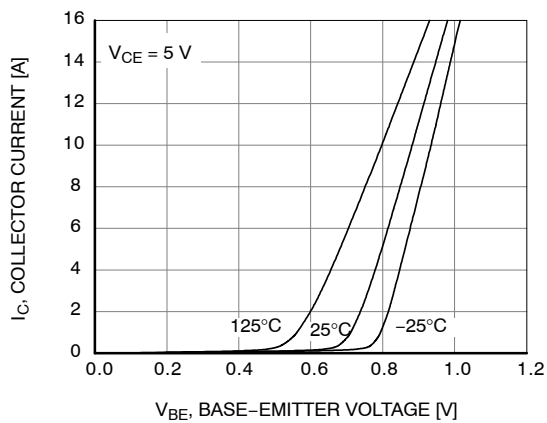


Figure 5. Base-Emitter On Voltage

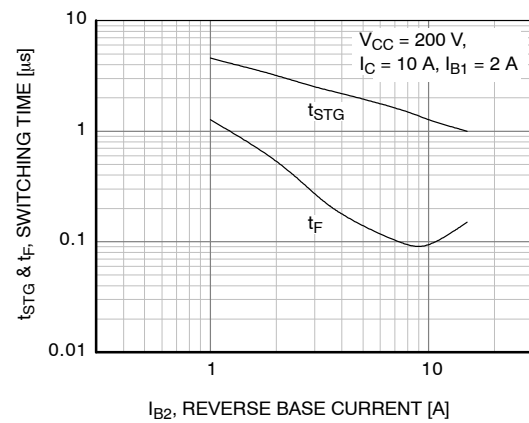


Figure 6. Resistive Load Switching Time

TYPICAL CHARACTERISTICS (Continued)

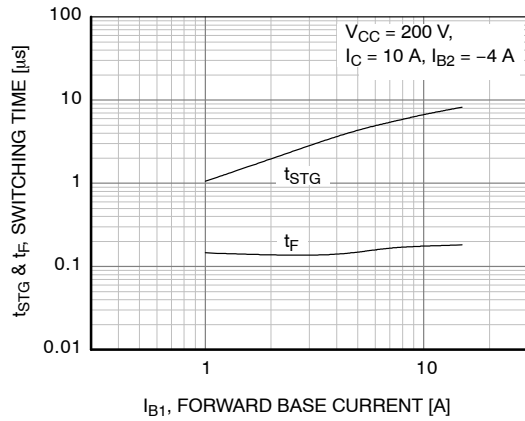


Figure 7. Resistive Load Switching Time

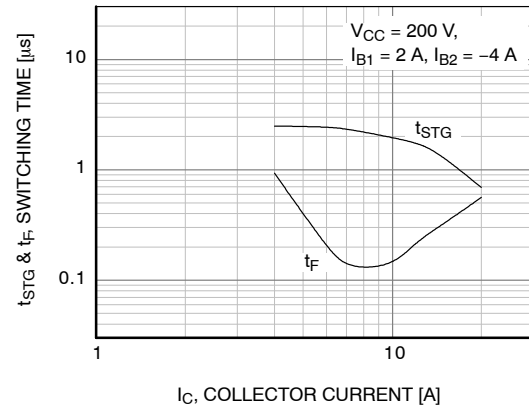


Figure 8. Resistive Load Switching Time

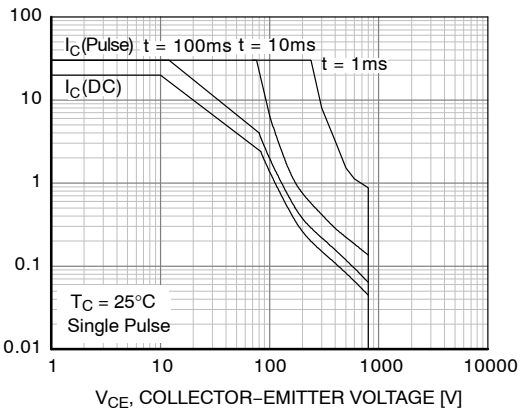


Figure 9. Forward Bias Safe Operating Area

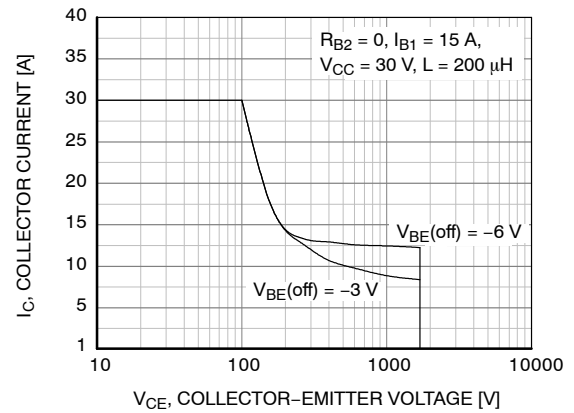


Figure 10. Reverse Bias Safe Operating Area

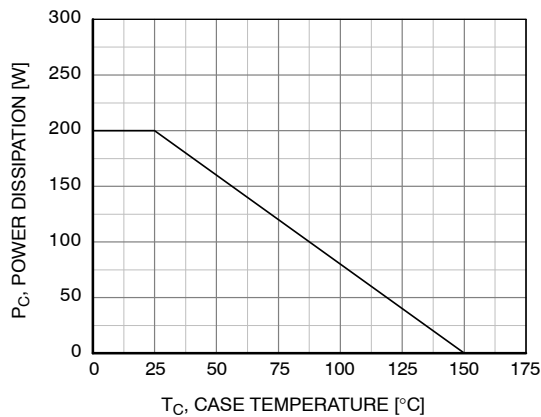
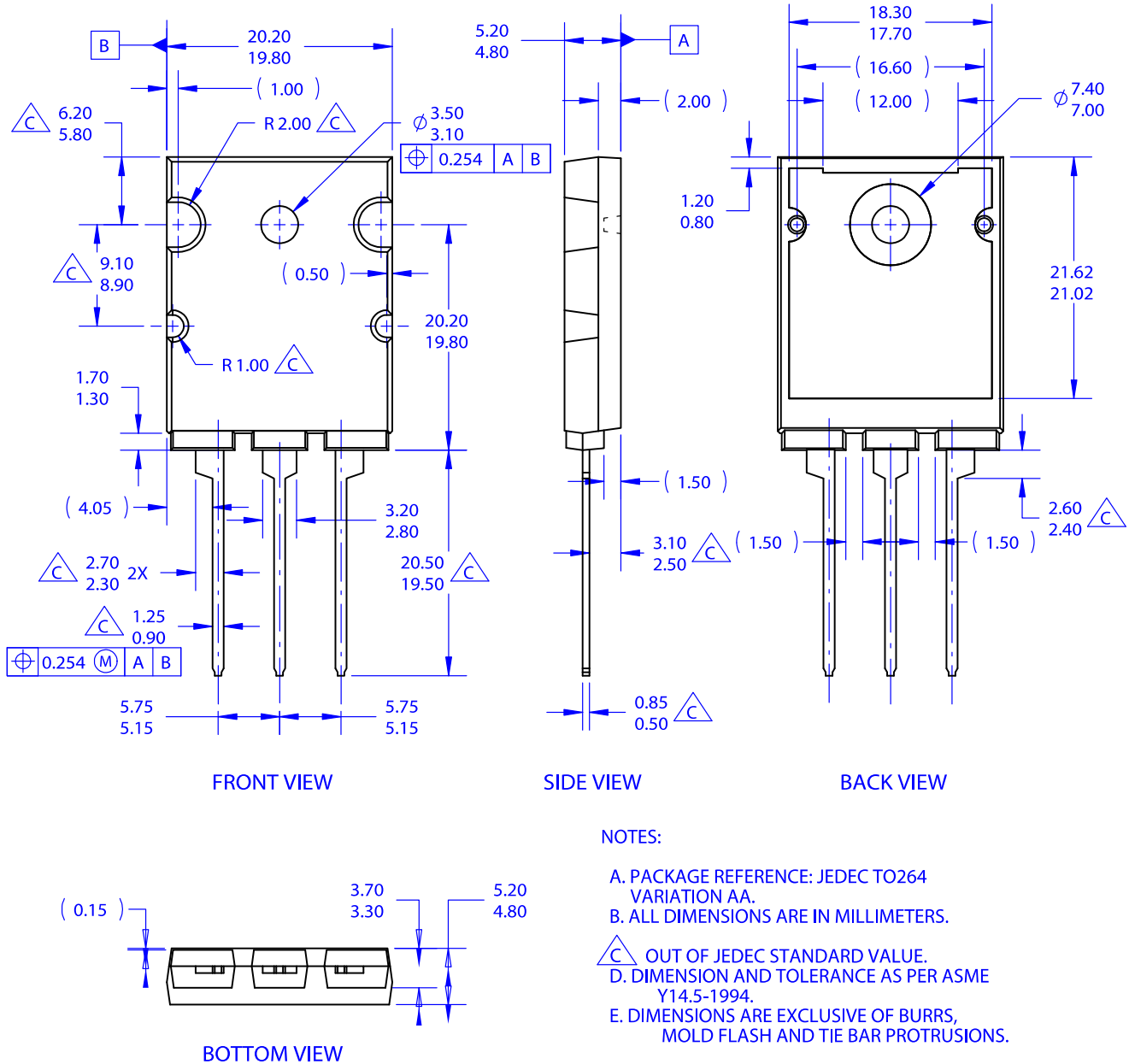


Figure 11. Power Derating

TO-264-3LD  
CASE 340CA  
ISSUE O

DATE 31 OCT 2016



DOCUMENT NUMBER:	98AON13860G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	TO-264-3LD	PAGE 1 OF 1

onsemi and Onsemi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. onsemi does not convey any license under its patent rights nor the rights of others.

**onsemi**, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## ADDITIONAL INFORMATION

### TECHNICAL PUBLICATIONS:

Technical Library: [www.onsemi.com/design/resources/technical-documentation](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at  
[www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)