



Micro Commercial Components



Micro Commercial Components  
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**2SD669(A)**  
**2SD669(A)-B**  
**2SD669(A)-C**  
**2SD669-D**

## Features

- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Capable of 1 Watts of Power Dissipation.
- Collector-current 1.5A
- Collector-base Voltage 180V
- Operating and storage junction temperature range: -55°C to +150°C
- Halogen free available upon request by adding suffix "-HF"

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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#### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=10\text{mAdc}$ , $I_B=0$ )	2SD669 2SD669A	120 160	---	Vdc Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=1\text{mAdc}$ , $I_E=0$ )		180	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=1\text{mAdc}$ , $I_C=0$ )		5.0	---	Vdc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB}=160\text{Vdc}$ , $I_E=0$ )		---	10	$\mu\text{Adc}$
$I_{EBO}$	Emitter Cutoff Current ( $V_{EB}=4\text{Vdc}$ , $I_C=0$ )		---	10	$\mu\text{Adc}$

#### ON CHARACTERISTICS

$h_{FE-1}$	DC Current Gain ( $I_C=150\text{mAdc}$ , $V_{CE}=5\text{Vdc}$ )	2SD669 2SD669A	60 60	320 200	---
$h_{FE-2}$	DC Current Gain ( $I_C=500\text{mAdc}$ , $V_{CE}=5\text{Vdc}$ )		30	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=500\text{mAdc}$ , $I_B=50\text{mAdc}$ )		---	1.0	Vdc
$V_{BE}$	Base-Emitter Saturation Voltage ( $V_{CE}=5\text{Vdc}$ , $I_C=150\text{mAdc}$ )		---	1.5	Vdc
$f_T$	Transition Frequency ( $V_{CE}=5\text{Vdc}$ , $I_C=150\text{mAdc}$ )		140(TYP)		MHz
$C_{ob}$	Collector output capacitance ( $V_{CB}=10\text{Vdc}$ , $I_E=0$ , $f=1\text{MHz}$ )		14(TYP)		pF

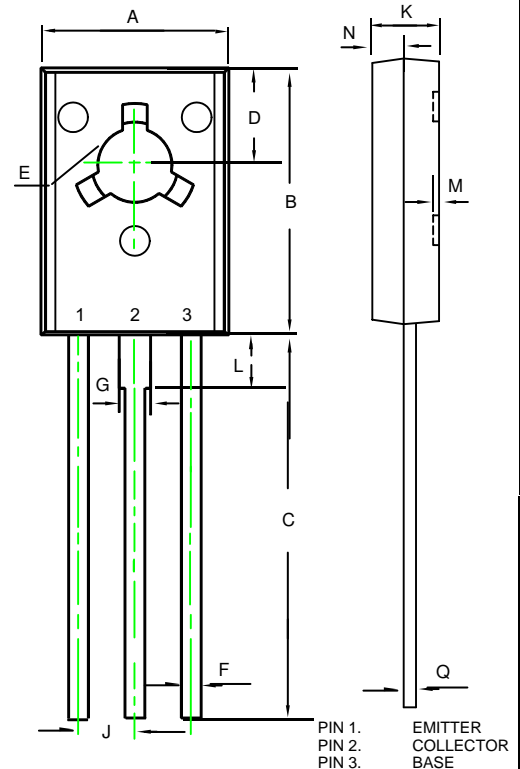
#### CLASSIFICATION OF H<sub>FE</sub>

Rank	B	C	D
Range 2SD669	60-120	100-200	160-320
2SD669A	60-120	100-200	

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7.

**NPN Silicon**  
**Plastic-Encapsulate**  
**Transistor**

TO-18



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.291	0.307	7.40	7.80	
B	0.417	0.433	10.60	11.00	
C	0.602	0.618	15.30	15.70	
D	0.154	0.161	3.90	4.10	
E	0.118	0.126	3.00	3.20	
F	0.026	0.034	0.66	0.86	
G	0.046	0.054	1.17	1.37	
J	0.090TYP		2.290TYP		
K	0.098	0.114	2.50	2.90	
L	0.083	0.091	2.10	2.30	
M	0.000	0.012	0.00	0.30	
N	0.043	0.059	1.10	1.50	
Q	0.018	0.024	0.45	0.60	

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### Ordering Information :

Device	Packing
Part Number-BP	Bulk; 1 Kpcs/Box

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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