

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

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BD675 SERIES

NPN SILICON
POWER DARLINGTON TRANSISTOR

TO-126 CASE

DESCRIPTION

The Central Semiconductor BD675 Series are NPN Silicon Darlington Power Transistors, available in the plastic TO-126 package, and are designed for audio and video output applications.

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

	SYMBOL	BD675	BD677	BD679	BD681	BD683	UNITS
Collector-Base Voltage	V_{CBO}	60	80	100	120	140	V
Collector-Emitter Voltage	V_{CEO}	45	60	80	100	120	V
Emitter-Base Voltage	V_{EBO}	5	5	5	5	5	V
Collector Current	I_C			4			A
Peak Collector Current	I_{CM}			6			A
Base Current	I_B			100			mA
Power Dissipation	P_D			40			W
Operating and Storage							
Junction Temperature	T_J, T_{stg}			-65 to +150			$^{\circ}\text{C}$
Thermal Resistance	θ_{JC}			3.12			$^{\circ}\text{C/W}$
Thermal Resistance	θ_{JA}			100			$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

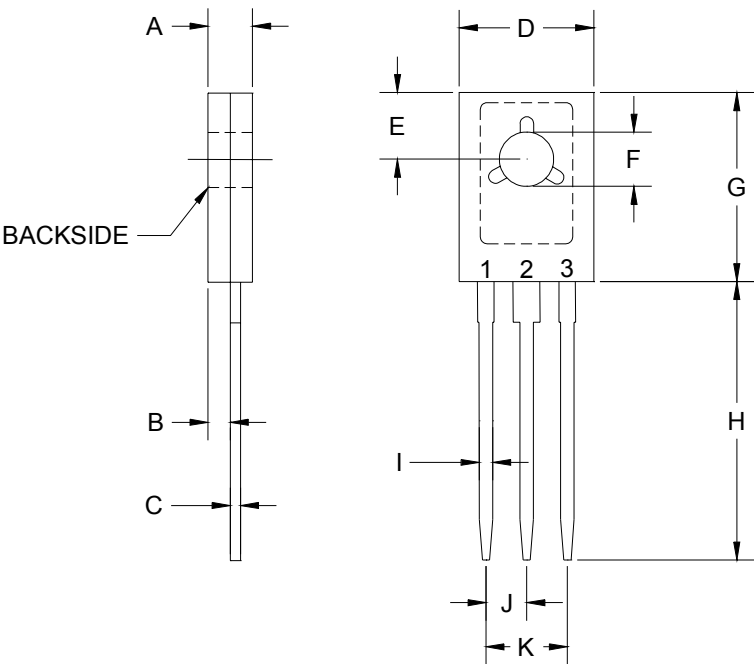
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=\text{Rated } V_{CBO}$			0.2	mA
I_{CBO}	$V_{CB}=\frac{1}{2} \text{ Rated } V_{CBO}, T_C=150^{\circ}\text{C}$			2.0	mA
I_{CEO}	$V_{CE}=\frac{1}{2} \text{ Rated } V_{CEO}$			0.5	mA
I_{EBO}	$V_{EB}=5.0\text{V}$			5.0	mA
BV_{CEO}	$I_C=50\text{mA}$	RATED V_{CEO}			V
$V_{CE(\text{SAT})}$	$I_C=1.5\text{A}, I_B=6.0\text{mA}$ (BD675; $I_C=2.0\text{A}$)			2.5	V
V_{BEON}	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}$ (BD675; $I_C=2.0\text{A}$)			2.5	V
h_{FE}	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}$ (BD675; $I_C=2.0\text{A}$)	750			
h_{fe}	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{MHz}$ (BD675; $I_C=2.0\text{A}$)	10			
fh_{fe}	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}$, (BD675; $I_C=2.0\text{A}$)		60		kHz

(SEE REVERSE SIDE)

ELECTRICAL CHARACTERISTICS (CONTINUED)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{(SB)}$	$V_{CE}=50V, t_p=20ms$	0.8			A
$I_{(SB)}$	$V_{CE}=40V, t_p=20ms$ (BD675)	1.0			A
t_{on}	$I_{Con}=1.5A, I_{Bon}=-I_{Boff}=6mA, V_{CC}=30V$		0.8	2.0	μs
t_{off}	$I_{Con}=1.5A, I_{Bon}=-I_{Boff}=6mA, V_{CC}=30V$		4.5	8.0	μs

TO-126 PACKAGE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.094	0.106	2.39	2.69
B	0.047		1.19	
C	0.019	0.029	0.48	0.74
D	0.295	0.307	7.49	7.80
E	0.149		3.78	
F	0.118	0.126	3.00	3.20
G	0.413	0.425	10.49	10.80
H	0.618		15.70	
I	0.027	0.035	0.69	0.89
J	0.087		2.21	
K	0.173		4.39	

TO-126 (REV:R1)

R1

Lead Code:

- 1) Emitter
- 2) Collector
- 3) Base