

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

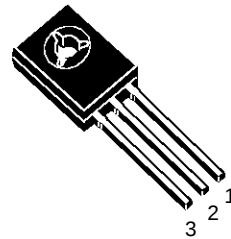
■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The BD677, BD677A, BD679, BD679A and BD681 are silicon epitaxial-base NPN power transistors in monolithic Darlington configuration mounted in Jedec SOT-32 plastic package.

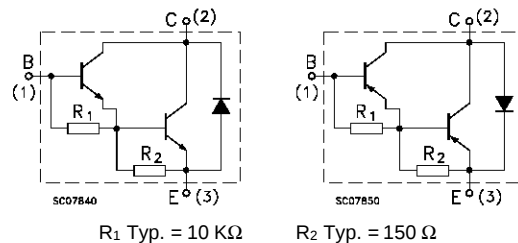
They are intended for use in medium power linear and switching applications

The complementary PNP types are BD678, BD678A, BD680, BD680A and BD682 respectively.



SOT-32

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value				Unit
		NPN	BD677/A	BD679/A	BD681	
	PNP	BD678/A	BD680/A	BD682		
V _{CBO}	Collector-Base Voltage (I _E = 0)	60	80	100	V	
V _{CEO}	Collector-Emitter Voltage (I _B = 0)	60	80	100	V	
V _{EBO}	Emitter-Base Voltage (I _C = 0)	5			V	
I _C	Collector Current	4			A	
I _{CM}	Collector Peak Current	6			A	
I _B	Base Current	0.1			A	
P _{tot}	Total Dissipation at T _c ≤ 25 °C	40			W	
T _{stg}	Storage Temperature	-65 to 150			°C	
T _j	Max. Operating Junction Temperature	150			°C	

For PNP types voltage and current values are negative.

BD677/677A/678/678A/679/679A/680/680A/681/682**THERMAL DATA**

R _{thj-case}	Thermal Resistance Junction-case	Max	3.12	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	100	°C/W

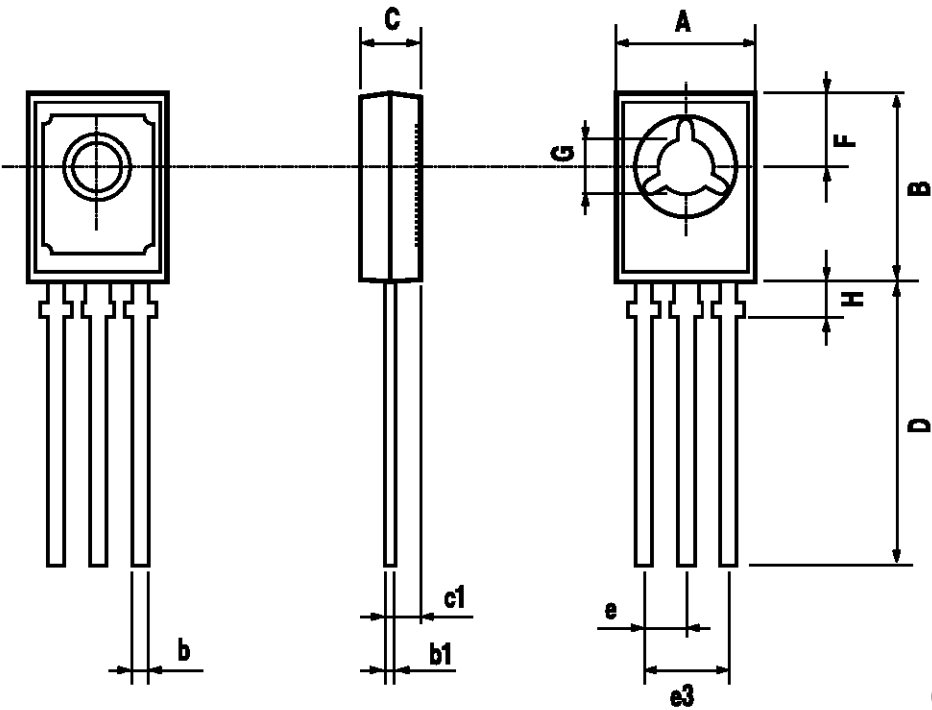
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CE} = rated V _{CBO} V _{CE} = rated V _{CBO} T _C = 100 °C			0.2 2	mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = half rated V _{CEO}			0.5	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			2	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage	I _C = 50 mA for BD677/677A/678/678A for BD679/679A/680/680A for BD681/682	60 80 100			V V V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	for BD677/678/679/680/681/682 I _C = 1.5 A I _B = 30 mA for BD677A/678A/679A/680A I _C = 2 A I _B = 40 mA			2.5 2.8	V V
V _{BE*}	Base-Emitter Voltage	for BD677/678/679/680/681/682 I _C = 1.5 A V _{CE} = 3 V for BD677A/678A/679A/680A I _C = 2 A V _{CE} = 3 V			2.5 2.5	V V
h _{FE*}	DC Current Gain	for BD677/678/679/680/681/682 I _C = 1.5 A V _{CE} = 3 V for BD677A/678A/679A/680A I _C = 2 A V _{CE} = 3 V	750 750			
h _{fe}	Small Signal Current Gain	I _C = 1.5 A V _{CE} = 3 V f = 1MHz	1			

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

SOT-32 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100



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