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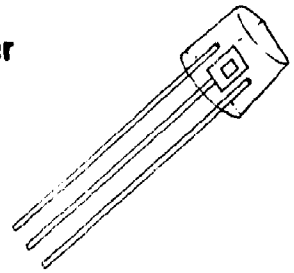
Light Detector Planar Silicon Photo-Darlington Amplifier

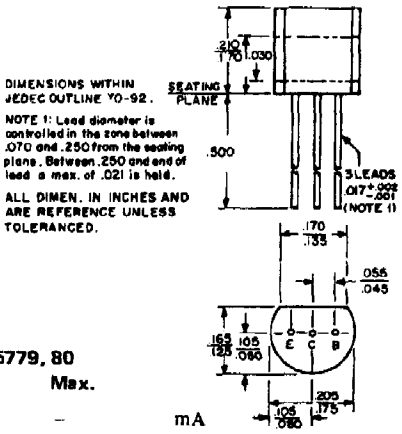
NPN 2N5777-80



absolute maximum ratings: (25°C) (unless otherwise specified)

		2N5777, 79 (L14D1,3)	2N5778, 80 (L14D2,4)	
Voltages—Dark Characteristics				
Collector to Emitter	V_{CEO}	25	40	Volts
Collector to Base	V_{CBO}	25	40	Volts
Emitter to Base	V_{EBO}	8	12	Volts
Current				
Light Current	I_L	250	250	mA
Dissipation				
Power Dissipation*	P_T	200	200	mW
Temperature				
Junction Temperature	T_J	←——100°C——→		
Storage Temperature	T_{stg}	←—65°C to +100°C—→		

*Derate 2.67mW/°C above 25°C ambient

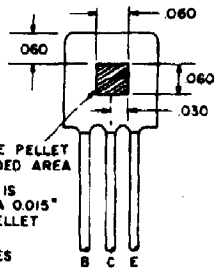


electrical characteristics: (25°C) (unless otherwise specified)

Static Characteristics		2N5777, 78 Min.	2N5777, 78 Max.	2N5779, 80 Min.	2N5779, 80 Max.	
Light Current (V_{CE} = 5V, H = 2mW/cm² **)	I_L	0.5	–	2.0	–	mA
Forward Current Transfer Ratio (V_{CE} = 5V, I_C = 2.0mA)	h_{FE}	1.0k	–	2.0k	–	
		2N5777, 79 Min.	**2N5777, 79 Max.**	**2N5778, 80 Min.**	**2N5778, 80 Max.**	
Dark Current (V_{CE} = 12V, I_B = 0)	I_D	–	100	–	100	nA
Collector-Emitter Breakdown Voltage (I_C = 10mA, H = 0)	$V_{(BR)CEO}$	25	–	40	–	Volts
Collector-Base Breakdown Voltage (I_C = 100μA, H = 0)	$V_{(BR)CBO}$	25	–	40	–	Volts
Emitter-Base Breakdown Voltage (I_E = 100μA, H = 0)	$V_{(BR)EBO}$	8	–	12	–	Volts

Dynamic Characteristics		2N5777-80 Min.	2N5777-80 Typ.	2N5777-80 Max.	
Switching Speeds (V_{CE} = 10V, I_L = 10mA, R_L = 100 ohms, GaAs LED source)					
Delay Time	t_d	–	30	100	μsec.
Rise Time	t_r	–	75	250	μsec.
Storage Time	t_s	–	0.5	5	μsec.
Fall Time	t_f	–	45	150	μsec.
Collector-Base Capacitance (V_{CB} = 10V, f = 1MHz)	C_{cb}	–	7.6	10	pF
Emitter-Base Capacitance (V_{EB} = 0.5V, f = 1MHz)	C_{eb}	–	10.5	–	pF
Collector-Emitter Capacitance (V_{CEO} = 10V, f - 1MHz)	C_{ceo}	–	3.4	–	pF

**H = Radiation Flux Density. Radiation source is an unfiltered tungsten filament bulb at 2870°K color temperature.



THE 0.026" SQUARE PELLET IS WITHIN THE SHADED AREA

THE ACTIVE AREA IS CENTERED WITHIN A 0.015" SQUARE ON THE PELLET SURFACE

DIMENSIONS IN INCHES

PELLET LOCATION

NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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