ELECTRONICS, INC.
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2N6426
Silicon NPN Transistor
Darlington General Purpose Amplifier
TO–92 Type Package

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 40V

Collector–Base Voltage, V_{CBO} 40V

Emitter–Base Voltage, V_{EBO} 12V

Continuous Collector Current, I_C 500mA

Total Device Dissipation (T_A = +25°C), P_D 625W
Derate Above 25°C . . . . . 5.0mW/°C

Total Device Dissipation (T_C = +25°C), P_D 1.5W
Derate Above 25°C . . . . . 12mW/°C

Operating Junction Temperature Range, T_J . . . . . –55° to +150°C

Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 200°C/W

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 83.3°C/W

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, V_{BE} = 0, Note 1	40	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	12	–	–	V
Collector Cutoff Current	I_{CES}	V_{CE} = 25V, I_B = 0	–	–	1.0	μA
	I_{CBO}	V_{CB} = 30V, I_E = 0	–	–	50	nA
Emitter Cutoff Current	I_{EBO}	V_{CB} = 30V, I_E = 0	–	–	50	nA

Note 1. Pulse test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Electrical Characteristics (Cont'd): (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics						
DC Current Gain	h_{FE}	I_C = 10mA, V_{CE} = 5V, Note 1	20,000	–	200,000	–
		I_C = 100mA, V_{CE} = 5V, Note 1	30,000	–	300,000	–
		I_C = 500mA, V_{CE} = 5V, Note 1	20,000	–	200,000	–
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 50mA, I_B = 0.5mA	–	0.71	1.2	V
		I_C = 500mA, I_B = 0.5mA	–	0.9	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 500mA, I_B = 0.5mA	–	1.52	2.0	V
Base–Emitter On Voltage	$V_{BE(on)}$	I_C = 50mA, V_{CE} = 5V	–	1.24	1.75	V
Small–Signal Characteristics						
Output Capacitance	C_{obo}	V_{CB} = 10V, I_E = 0, f = 1.0 MH_z	–	5.4	7.0	$_p$F
Input Capacitance	C_{ibo}	V_{EB} 1.0V, I_C = 0, f = 1.0 MH_z	–	10	15	$_p$F
Input Impedance	h_{ie}	I_C = 10mA, V_{CE} = 5V, f = 1 kHz	100	–	2000	kΩ
Small–Signal Current Gain	h_{fe}	I_C = 10mA, V_{CE} = 5V, f = 1 kHz	20,000	–	–	–
Current Gain – High Frequency	$\|h_{fe}\|$	I_C = 10mA, V_{CE} = 5V, f = 100 kHz	1.5	2.4	–	–
Output Admittance	h_{oe}	I_C = 10mA, V_{CE} = 5V, f = 1kHz	–	–	1000	μmhos
Noise Figure	NF	I_C = 10mA, V_{CE} = 5V, f = 1kHz, R_S = 100 kΩ	–	3.0	10	dB

Note 1. Pulse test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.