61083	SURFACE MOUNT (PNP) GENERAL PURPOSE TRANSISTOR (2N2907AUA)	Mii OPTOELECTRONIC PRODUCTS DIVISION

Features:	Applications:
• Hermetically sealed • Miniature package to minimize circuit board area • Ceramic surface mount package • MIL-PRF-19500 screening available	• Analog Switches • Signal Conditioning • Small Signal Amplifiers • High Density Packaging

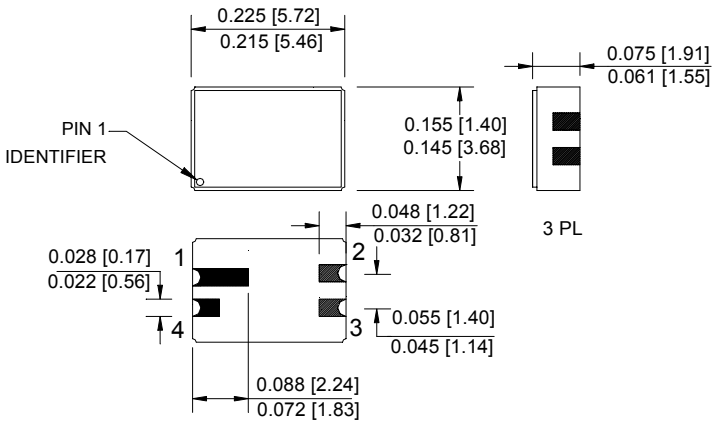
DESCRIPTION

The ***61083*** is a hermetically sealed ceramic surface mount general purpose switching transistor. This miniature ceramic package is ideal for designs where board space and device weight are important requirements. This device is available custom binned to customer specifications or screened to MIL-PRF-19500.

ABSOLUTE MAXIMUM RATINGS

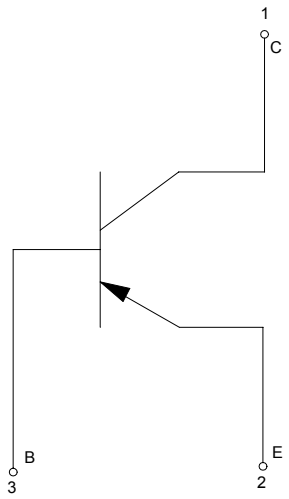
Collector-Base Voltage	60V
Collector-Emitter Voltage	60V
Emitter-Collector Voltage	5V
Continuous Collector Current	600mA
Power Dissipation (Derate at the rate of 2.28 mW/°C above 25°C)	400mW
Maximum Junction Temperature	200°C
Operating Temperature (See part selection guide for actual operating temperature)	-65°C to +200°C
Storage Temperature	-65°C to +200°C
Lead Soldering Temperature (vapor phase reflow for 30 seconds)	215°C

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram



ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
Collector-Base Breakdown Voltage	BV_{CBO}	60		V	I_C = 10μA, I_E = 0	
Collector-Emitter Breakdown Voltage	BV_{CEO}	60		V	I_C = 10mA, I_B = 0μA	
Emitter-Base Breakdown Voltage	BV_{EBO}	5		V	I_C = 0, I_E = 10μA	
Collector-Base Cutoff Current	I_{CBO}		10	nA	V_{CB} = 50V, I_E = 0	
			10	μA	V_{CB} = 50V, I_E = 0, T_A = 150°C	
Collector-Emitter Cutoff Current	I_{CES}		50	nA	V_{CE} = 30V	
Emitter-Base Cutoff Current	I_{EBO}		50	nA	V_{EB} = 3.5V, I_C = 0	
Forward-Current Transfer Ratio	h_{fe1}	75		-	V_{CE} = 10V, I_C = 0.1mA	
	h_{fe2}	100	450	-	V_{CE} = 10V, I_C = 1mA	
	h_{fe3}	100		-	V_{CE} = 10V, I_C = 10mA	
	h_{fe4}	100	300	-	V_{CE} = 10V, I_C = 150mA	1
	h_{fe5}	50		-	V_{CE} = 10V, I_C = 500mA	1
	h_{fe6}	50		-	V_{CE} = 10V, I_C = 1mA @ -55°C	
Collector-Emitter Saturation Voltage	$V_{CE\ (SAT)}$		0.40	V	I_C = 150mA, I_B = 15mA	1
			1.60	V	I_C = 500mA, I_B = 50mA	1
Base-Emitter Saturation Voltage	$V_{BE\ (SAT)}$		1.30	V	I_C = 150mA, I_B = 15mA	1
			2.60	V	I_C = 500mA, I_E = 50mA	1

SMALL-SIGNAL CHARACTERISTICS

Small Signal Forward Current Transfer Ratio	h_{fe}	100		-	V_{CE} = 10V, I_C = 1mA, f = 1kHz	
Small Signal Forward Current Transfer Ratio	h_{fe}	2		-	V_{CE} = 20V, I_C =50mA, f = 100kHz	
Open Circuit Output Capacitance	C_{OBO}		8	Pf	V_{CB} = 10V, 100kHz, ≤ f ≤ 1 MHz	
Input Capacitance (Output Open Capacitance)	C_{IBO}		30	Pf	V_{EB} = 2 V, 100kHz, ≤ f ≤ 1 MHz	
Turn-On Time	t_{on}		45	Ns	V_{CC} = 30V, I_C = 150mA, I_{B1} = 15mA	
Turn-Off Time	t_{off}		300	ns	V_{CC} = 30V, I_C = 150mA, I_{B1} = I_{B2} = 15mA	

NOTES:

1. Pulse width ≤ 300μs, duty cycle ≤ 2.0%.

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Bias Voltage-Collector/Emitter	I_C	10	150	mA
Collector-Emitter Voltage	V_{CE}	5	20	V

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
61083-001	2N2907AUA, PNP transistor, commercial version
61083-002	2N2907AUA, PNP transistor, JAN level screening
61083-101	2N2907AUA, PNP transistor, JANTX level screening
61083-102	2N2907AUA, PNP transistor, JANTXV level screening
61083-300	2N2907AUA, PNP transistor, JANS level screening