New Jersey Semi-Conductor Products, Inc.

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Mechanical Outline

2N1038, 2N1039*, 2N1040, 2N1041*	A
2N2552, 2N2553*, 2N2554, 2N2555*	B
2N2556, 2N2557*, 2N2558, 2N2559*	C

*Available to Military Specifications

PNP GERMANIUM ALLOY JUNCTION POWER TRANSISTORS

These hermetically sealed and dynamically tested units are designed to switch reactive and resistive loads at maximum efficiency by using a unique internal heat-sink design. Each unit can dissipate up to .4 watt in free air at 25°C and up to 1 watt in forced air at 25°C and can also be pressed into suitable heat-sink wells to dissipate up to 8 watts at 71°C. Typical applications include relay drivers, pulse amplifiers, audio amplifiers and high current switching circuits. The collector lead is internally connected to the case.

MAXIMUM DESIGN LIMITS

	2N1038 2N2552 2N2556	2N1039 2N2553 2N2557	2N1040 2N2554 2N2558	2N1041 2N2555 2N2559	Units
Collector-to-Base Voltage, V_{CB}	−40	−60	−80	−100	Volts
Collector-to-Emitter Voltage, V_{CE}					
Acting Region Emitter Forward Biased	−30	−40	−50	−60	Volts
Cutoff Region Emitter Reverse Biased	−40	−60	−80	−100	Volts
Emitter-to-Base Voltage, V_{EB}		−20			Volts
Collector Current, I_C		−3.0			Amp
Base Current, I_B		−1.0			Amp
Operating and Junction Temp. T_J		−55 to +100			°C
Thermal Resistance, Junction to Free Air θ JA		185			°C/W
Thermal Resistance, Junction to Case θ JC		3.67			°C/W

CHARACTERISTICS AT 25°C CASE TEMPERATURE

Parameter	Symbol	Condition	Min.	Max.	Units
Current Gain, Common Emitter	H_{FE1}	$V_{CE}=-0.5V$, $I_C=-1$ A	20	60	—
Current Gain, Common Emitter	H_{FE2}	$V_{CE}=-0.5V$, $I_C=-50$ mA	33	200	—
Base-to-Emitter Voltage	V_{BE1}	$V_{CE}=-0.5V$, $I_C=-1.0$ A		−1.0	Volts
	Y_{FE1}		1.0		mhos
Base-to-Emitter Voltage	V_{BE2}	$V_{CE}=-0.5V$, $I_C=-50$ mA		−0.35	Volts
	Y_{FE2}		0.143		mhos
Collector-Emitter Saturation Voltage*	V_{CE} (sat)	$I_C=-1$ A, $I_B=-100$ mA		0.25	Volts
Collector Junction Leakage Current	I_{CBO}				
2N1038, 2N2552, 2N2556		$V_{CB}=-20V$		−125	μAmp
2N1039, 2N2553, 2N2557		$V_{CB}=-30V$			
2N1040, 2N2554, 2N2558		$V_{CB}=-40V$			
2N1041, 2N2555, 2N2559		$V_{CB}=-50V$			
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=-750$			
2N1038, 2N2552, 2N2556			−40		Volts
2N1039, 2N2553, 2N2557			−60		
2N1040, 2N2554, 2N2558			−80		
2N1041, 2N2555, 2N2559			−100		
Collector Cutoff Current	I_{CEX}	$V_{BE}=+0.2V$			
2N1038, 2N2552, 2N2556		$V_{CE}=-40V$		−650	μAmp
2N1039, 2N2553, 2N2557		$V_{CE}=-60V$			
2N1040, 2N2554, 2N2558		$V_{CE}=-80V$			
2N1041, 2N2555, 2N2559		$V_{CE}=-100V$			

*Note: Measured adjacent to header to minimize lead effects.