

2N3054, 2N6260, 2N6261, 40250, 40572, 40910, 40911 Hometaxial-Base Medium-Power Silicon N-P-N Transistors

Rugged Devices for Intermediate-Power Applications in
Industrial and Commercial Equipment

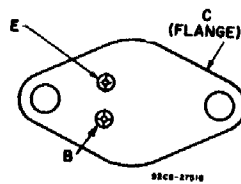
Features:

- $f_T = 800$ kHz at 0.2A (2N3064, 40372)
- Maximum safe-area-of-operation curves for dc and pulse operation
- $V_{CEV(sus)} = 90$ V min (2N3054, 2N6261)
- Low saturation voltage: $V_{CE(sat)} = 1.0$ V at $I_C = 0.5$ A (2N3054)

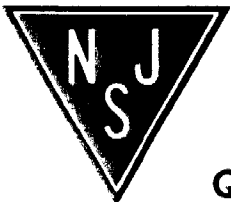
Applications:

- Power switching circuits
- Series- and shunt-regulator driver and output stages
- High-fidelity amplifiers
- Solenoid drivers.

TERMINAL DESIGNATIONS



JEDEC TO-18
2N3054, 2N6260, 2N6261, 40250



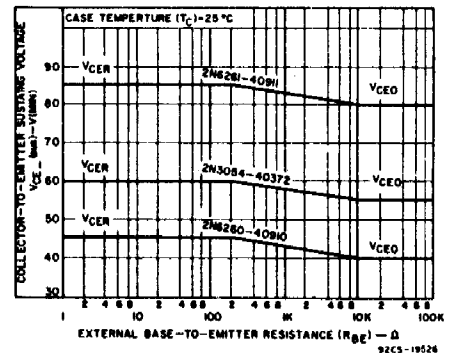
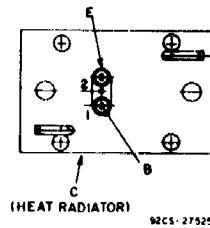
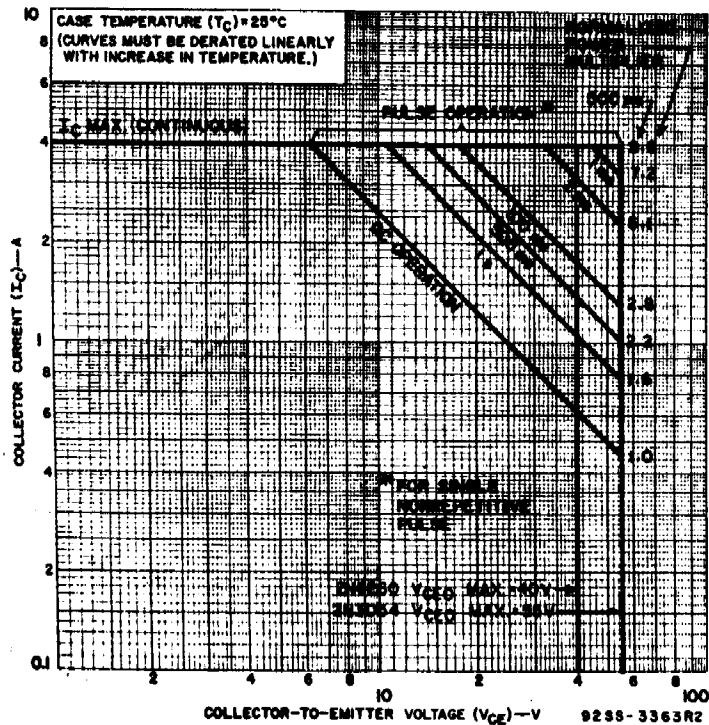
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Maximum Ratings, Absolute-Maximum Values:

	40250 40250V1	2N6260 40910	2N3054 40372	2N6261 40911	
* COLLECTOR-TO-BASE VOLTAGE	50	50	90	90	V
COLLECTOR-TO-EMITTER VOLTAGE:					
* With base open	40	40	55	80	V
* With external base-to-emitter resistance (R_{BE}) = 100Ω	—	45	60	85	V
With base reverse-biased (V_{BE} = -1.5 V)	50	50	90	90	V
* EMITTER-TO-BASE VOLTAGE	5	5	7	7	V
* CONTINUOUS COLLECTOR CURRENT	4	3	4	4	A
* CONTINUOUS BASE CURRENT	2	2	2	2	A
* TRANSISTOR DISSIPATION:					
* At case temperature up to 25°C	29	29	25	50	W
At ambient temperatures up to 25°C	(40250)	(2N6260)	(2N3054)	(2N6261)	
	5.8	5.8	5.8	5.8	W
	(40250V1)	(40910)	(40372)	(40911)	
	—Derate linearly to 200°C—				
* At temperatures above 25°C	— 65 to 200 —				°C
* TEMPERATURE RANGE:					
Storage & Operating (Junction)					
PIN TEMPERATURE (During soldering):					
At distance \geq 1/32 in. (0.8 mm) from seating plane for 10 s max.					235 °C

*In accordance with JEDEC registration data format JS-9 RDF-10 (2N3054), JS-6 RDF-2 (2N6260, 2N6261)



2N3054, 2N6260, 2N6261, 40250, 40572, 40910, 40911

ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C unless otherwise specified

CHARACTERISTIC	SYMBOL	TEST CONDITIONS				LIMITS								UNITS
		VOLTAGE V dc		CURRENT A dc		2N6260 40910		2N3054 40372		2N6261 40911		40250 40250V1		
		V _{CE}	V _{BE}	I _C	I _B	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
Collector-Cutoff Current: With base open	I _{CEO}	V _{CB} = 30 30 60		I _E = 0									1	mA
With base-emitter junction reverse-biased	I _{CEV}	40 80 90	-1.5 -1.5 -1.5				5				0.5			
At T_C = 150°C	I _{CBO} I _{CE}	V _{CB} = 30 40 80 90		I _E = 0									5	
Emitter-Cutoff Current	I _{EBO}		-5 -7		0 0		5						5	mA
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}			0.05								50		V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEV}		-1.5	0.05								50		V
Collector-to-Emitter Sustaining Voltage: With base open	V _{CEO(sus)}			0.1 ^a	0	40		55		80		40		V
With external base-to-emitter resistance (R _{BE}) = 100Ω	V _{CER(sus)}			0.1 ^a		45		60		85				V
Emitter-to-Base Breakdown Voltage I _E = 0.005 mA	V _{(BR)EBO}											5		V
DC Forward-Current Transfer Ratio	h _{FE}	2		4 ^a		3				5				
		2		1.5 ^a						25	100			
		4		3 ^a				5						
		4		0.5 ^a				25	150					
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}			0.5 ^a 1.5 ^a 3 ^a	0.05 ^a 0.15 ^a 1 ^a				1.0					V
Base-to-Emitter Voltage	V _{BE}	2		1.5							1.5			
		4		1.5		2.2						2.2		V
		4		0.5				1.7						
Common-Emitter Small-Signal Short-Circuit, Forward Current Transfer Ratio Cutoff Frequency	f _{hfe}	4		0.1		0.03		0.03		0.03				MHz
Magnitude of Common-Emitter, Small-Signal, Short-Circuit Forward Current Transfer Ratio (f = 0.4 MHz)	h _{fe}	4		0.1		2				2				
Common-Emitter, Small- Signal, Short-Circuit Forward Current Transfer Ratio (f = 1 kHz)	h _{fe}	4		0.1		25		25		25				
Forward Bias Second Breakdown Collector Current (t = 1 s)	I _{S/b}	40 80 55				0.725					0.625			A
Thermal Resistance: Junction-to-Case	R _{θJC}					6 (max.) 2N6260		7 (max.) 2N3054		3.5 (max.) 2N6261		6 (max.) 40250		°C/W
Junction-to-Ambient	R _{θJA}					30 (max.) 40901		30 (max.) 40372		30 (max.) 40911		30 (max.) 40250V1		

^aPulsed: Pulse duration = 300 μs duty factor = 1.8%.

*In accordance with JEDEC registration data format JS-9 RDF-10 (2N3054) JS-6 RDF-2 (2N6260-61)