Transistor Museum™ Store
Historic Semiconductor Fact Sheet
Transitron 2N343 Silicon NPN Grown Junction Transistor

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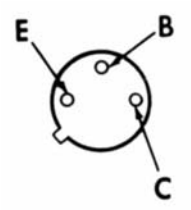
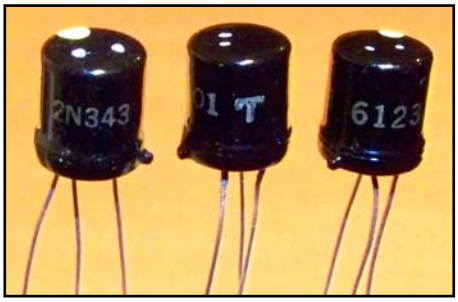
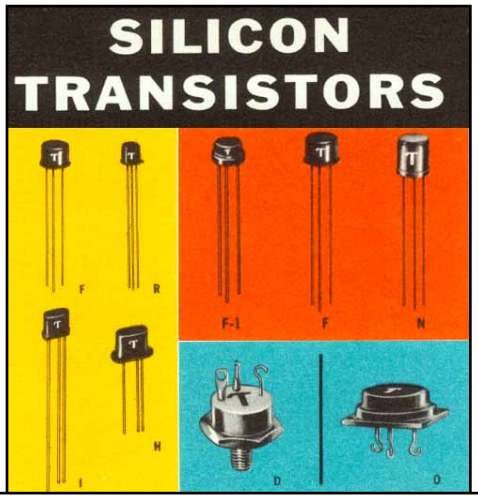
TRANSISTOR MUSEUM™
Classic Semiconductors
Transitron 2N343
Silicon NPN Grown
Junction Transistor
Vintage: 1950s/1960s
Use: Audio/Military



2N343 Lead Configuration Bottom View



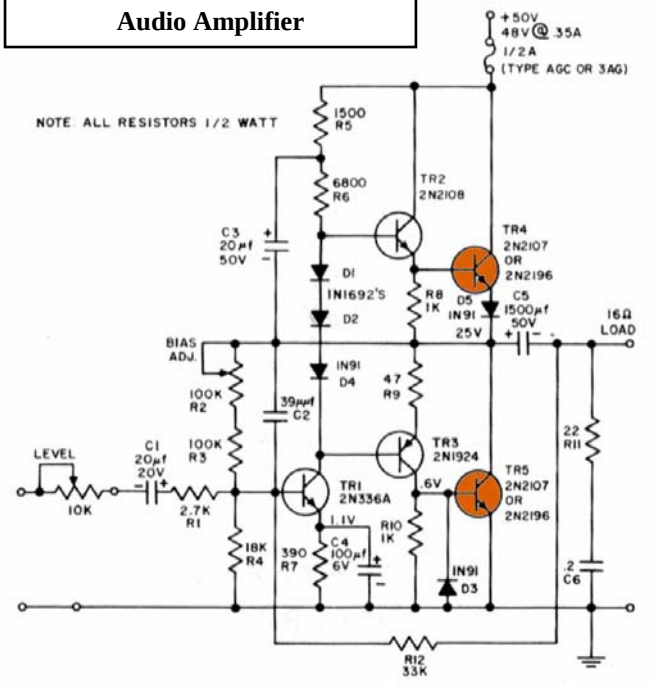
Typical early 1960s Transitron 2N343 transistors were marked as shown above - the "6123" date code denotes 1961 week 23.



Historical Background: Several companies were leaders in producing the first types of silicon transistors in the 1950s. Shown above is a section of the 1960 Transitron catalogue, with the claim "Industry's broadest line of silicon transistors." Note the variety of case styles, from small low power devices, to the medium power 2N343 type (upper right in illustration), to the high power types with heavy metal cases (lower right). The 2N343 was listed as a general purpose One Watt device, designed for low level signal applications, including audio or servo amplifiers, and was qualified for military

Additional 2N343 Historical Information: Texas Instruments introduced the 2N339 – 2N343 line of medium power silicon grown junction transistors in 1957. This is a very early timeframe for silicon technology, as only three years had passed since the introduction of the first commercial silicon transistors by TI in 1954. During the 1950s, transistor technology was advancing rapidly, and the grown junction technology used for these first silicon transistors was soon superseded by more advanced technologies such as diffused/mesa and planar. The line of related devices numbered from 2N339 through 2N343 differed primarily in breakdown voltage and gain, and the 2N343 was the highest performing type. The military was a major user of these early silicon transistors, and prices were quite high as the demand for this new technology was expanding rapidly. For example, the 1960 Lafayette Radio catalog lists the 2N343 from TI for $30. That's over $200 in 2012 prices. With this type of financial incentive, other companies soon began competing with TI. Transitron was the major second source supplier for the 2N339 – 2N343 line of transistors, and sold millions of these devices into the 1960s. Although most applications for the 2N343 were military related, this device could also be used in commercial/hobbyist audio circuits. Shown at right is a unique audio amplifier originally shown in the High Fidelity section of the 1962 Sixth Edition of the GE Transistor Manual. The 2N2107 transistor in the circuit is equivalent to the 2N343.

10 Watt Historic Silicon Hi-Fi Audio Amplifier



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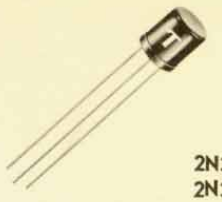
1958 Transitron 2N343 Transistor Datasheet

Transitron

NPN SILICON TRANSISTORS

GENERAL PURPOSE TYPES



2N342
2N343

1 WATT

Transitron's 2N342 and 2N343 NPN silicon transistors are designed for low level signal applications up to 150°C.

High temperature reliability is insured through close process control which results in a stable and low I_{CO} up to the maximum voltage rating. Extensive temperature cycling and storage, as well as mechanical and hermetic seal tests, are included as a regular part of the manufacturing process.

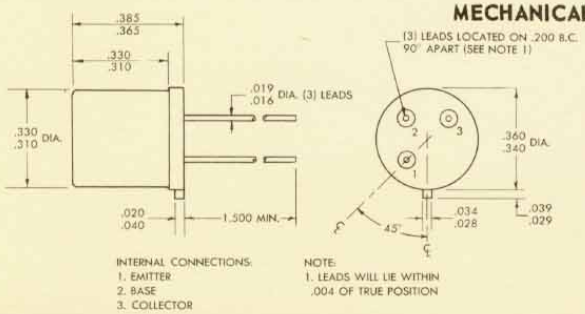
ABSOLUTE MAXIMUM RATINGS

Collector to Emitter Voltage	V_{CE}	60	Volts
Collector to Base Voltage	V_{CB}	60	Volts
Emitter to Base Voltage	V_{EB}	1	Volt
Total Power Dissipation:	at 25°C	1000	mw
	at 100°C	400	mw
	at 125°C	200	mw
Storage and Operating Ambient Temperature Range		−65°C to +150°C	

SPECIFICATIONS AND TYPICAL CHARACTERISTICS AT 25°C

Common Emitter Parameters:		2N342 Min.	2N342 Max.	2N343 Min.	2N343 Max.		Test Conditions
Current Gain	h_{fe}	9	32	29	90		V_c = 10V, I_e = 5 ma
Power Gain	P.G.	30		30		db	V_{CE} = 28V R_L = 1K, I_C = 20ma
Common Base Parameters							
Breakdown Voltages							
Collector to Emitter	V_{CE}	60		60		V	I_C = 100 μa
Collector to Base	V_{CB}	60		60		V	I_C = 50 μa
Emitter to Base	V_{EB}	1		1		V	I_E = 100 μa
Collector Cutoff Current	I_{CO}		1		1	μa	V_{CB} = 30V
	I_{CO}		250		250	μa	V_{CB} = 30V, 150°C
Input Impedance	h_{ib}		30		30	ohm	V_c = 10V, I_e = 5ma
Output Admittance	h_{ob}		2		2	μmhos	V_c = 10V, I_e = 5ma
Voltage Feedback Ratio	h_{rb}		3		3	x10−4	V_c = 10V, I_e = 5ma
DC Collector Saturation Resistance	R_{cs}		350		350	ohm	I_C = 20ma, I_B = 3ma

MECHANICAL DATA



ENCAPSULATION: Welded hermetic seal.

MOUNTING POSITION: Any.

NOTE: Transistors supplied all leads isolated, collector grounded or emitter grounded. Unless otherwise specified all leads will be isolated.

A heat sink (long nose pliers) should be used when soldering leads within 1/4 inch of the glass seals, although the transistors are designed to withstand dip soldering for 8 seconds at 230°C 1/8 inch from the base.

TE-1355K
7-58

Transitron electronic corporation • wakefield, massachusetts

CATALOG NO. 83.35.105

