



## NUMERICAL INDEX

Numerical Listing of EIA-Registered 2N and 3N Type Numbers and Short-Form specifications for Bi-Polar Transistors.

This table serves two functions. It provides a complete listing of EIA-registered 2N and 3N type numbers, for device identification, and gives short-form specifications for bi-polar transistors. Type numbers for devices other than bi-polar transistors (i.e. thyristors, field-effect transistors, etc.), may be listed in blocks (2N — thru 2N —) with reference to subsequent tables where such devices are sequentially tabulated and short-form specifications are given.

**KEY**

Collector-Emitter Saturation Voltage at Specified Collector Current  
 $I_c$  Units:  
**A** = Amps  
**M** = milliamps

TYPE	MATERIAL POLARITY	REPLACE- MENT	REF.	USE	MAXIMUM RATINGS				ELECTRICAL CHARACTERISTICS					
					$P_D$ @ 25°C	Ref Point	$T_J$ °C	$V_{CBO}$ (volts)	$V_{CE}$ - Subscript (volts)	$h_{FE}$ @ $I_c$ (min) (max)	Units	$V_{CE(SAT)}$ @ $I_c$ (volts)	Units	$h_{f-}$ Subscript
<p>Numerical Listing of 2N and 3N Registered Type Numbers</p> <p>S = Silicon G = Germanium</p> <p>P = PNP N = NPN</p> <p>Type number of recommended replacement or of nearest electrical equivalent fully characterized in this book</p> <p>Reference device number indicates specific Data Sheet on which device is characterized</p>					<p>Common-Emitter DC Short-Circuit Forward-Current Transfer Ratio at Specified Collector Current</p> <p><math>I_c</math> Units: <b>A</b> = Amps <b>M</b> = milliamps <b>*</b> = microamps <b>N</b> = nanoamps</p> <p>Maximum Collector-Emitter Voltage (Subscript Identifies Condition)</p> <p>Subscript:  <b>O</b> = <math>V_{CEO}</math> = Base Open  <b>R</b> = <math>V_{CER}</math> = Specified Resistance  <b>S</b> = <math>V_{CES}</math> = Base Shorted  <b>V</b> = <math>V_{CEV}</math> = Used when only voltage bias is used  <b>X</b> = <math>V_{CEX}</math> = Base-Emitter Back Biased  <b>U</b> = <math>V_{CE}</math> = Termination Undefined</p>					<p>Small-Signal Forward-Current Transfer Ratio (E, B or C defines the parameter)</p> <p><b>E</b> = <math>h_{fe}</math> = Common-Emitter Current Transfer Ratio  <b>B</b> = <math>h_{fb}</math> = Common-Base Current Transfer Ratio  <b>C</b> = <math>h_{fc}</math> = Common-Collector Current Transfer Ratio</p>				
<p><b>APPLICATION CODE</b></p> <p>A = Amplifier  AH = Amplifier, High frequency  AHP = Amplifier, High frequency power  AL = Amplifier, Light sensitive  AM = Amplifier, Multiple device  AP = Amplifier, Power  S = Switch  SC = Switch, Chopper  SH = Switch, High speed  SHP = Switch, High speed power  SP = Switch, Power</p>					<p><b>CUTOFF FREQUENCY</b></p> <p>Units: <b>K</b> = KHz <b>M</b> = MHz <b>G</b> = GHz</p> <p>(B, E, M or T Indicate the Parameter)</p> <p><b>B</b> = <math>h_{fb}</math> = <math>f_{ab}</math> = Common-Base Cutoff Frequency  <b>E</b> = <math>h_{fe}</math> = <math>f_{ae}</math> = Common-Emitter Cutoff Frequency  <b>M</b> = <math>f_{max}</math> = Maximum Frequency of Oscillations  <b>T</b> = <math>f_r</math> = Current Gain - Bandwidth Product</p>									
<p>Power Dissipation at 25°C</p> <p>Units: <b>M</b> = milliwatts <b>W</b> = Watts</p> <p>Ref. Point: A, C, J, Indicates Ambient, Case, or Junction</p>					<p>Maximum Collector - Base Voltage</p> <p>Maximum Operating Junction Temperature</p>									