

DESCRIPTION The 2SC3615 is designed for general-purpose applications requiring High DC Current Gain. This is suitable for all kind of driving, instead of Darlington Transistor, or muting.

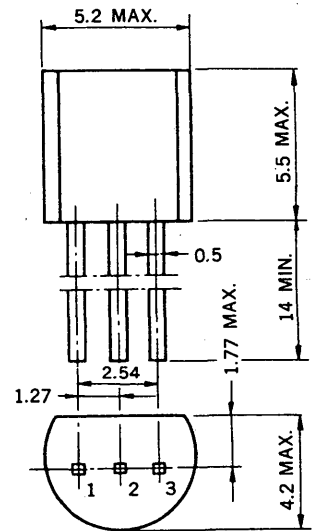
- FEATURES**
- High DC Current Gain.
 $h_{FE} = 800$ to 3200 (@ $V_{CE} = 5.0$ V, $I_C = 100$ mA)
 - Low Collector Saturation Voltage.
 $V_{CE(sat)} = 0.11$ V TYP. (@ $I_C/I_B = 100$ mA/1.0 mA)
 - High V_{EBO} : $V_{EBO} = 15$ V
 - High Total Power Dissipation. : $P_T = 0.75$ W (@ $T_a = 25^\circ\text{C}$)

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures	
Storage Temperature -55 to $+150^\circ\text{C}$
Junction Temperature 150°C Maximum
Maximum Power Dissipation ($T_a = 25^\circ\text{C}$)	
Total Power Dissipation 0.75 W
Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)	
V_{CBO} Collector to Base Voltage 50 V
V_{CEO} Collector to Emitter Voltage 50 V
V_{EBO} Emitter to Base Voltage 15 V
I_C Collector Current (DC) 300 mA
I_C Collector Current (pulse)* 500 mA

*PW ≤ 10 ms, Duty Cycle ≤ 50 %

PACKAGE DIMENSIONS
in millimeters (inches)



1. Emitter EIAJ : SC-43B
2. Collector JEDEC : TO-92
3. Base IEC : PA33

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}	DC Current Gain	800		3200	—	$V_{CE} = 5.0$ V, $I_C = 100$ mA
h_{FE2}	DC Current Gain	640			—	$V_{CE} = 5.0$ V, $I_C = 300$ mA
f_T	Gain Bandwidth Product	150	220		MHz	$V_{CE} = 5.0$ V, $I_E = -100$ mA
C_{ob}	Output Capacitance		8.0		pF	$V_{CB} = 10$ V, $I_E = 0$, $f = 1.0$ MHz
I_{CBO}	Collector Cutoff Current			100	nA	$V_{CB} = 50$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			100	nA	$V_{EB} = 10$ V, $I_C = 0$
V_{BE}	Base to Emitter Voltage	600		700	mV	$V_{CE} = 5.0$ V, $I_C = 100$ mA
$V_{CE(sat)}$	Collector Saturation Voltage		0.11	0.3	V	$I_C = 100$ mA, $I_B = 1.0$ mA
$V_{BE(sat)}$	Base Saturation Voltage		0.7	1.2	V	$I_C = 100$ mA, $I_B = 1.0$ mA
t_{on}	Turn-On Time		0.15		μs	$(V_{CC} = 10$ V, $V_{BE(off)} = -2.7$ V) $I_C = 200$ mA $I_{B1} = -I_{B2} = 4.0$ mA
t_{stg}	Storage Time		0.75		μs	
t_{off}	Turn-Off Time		1.1		μs	

Classification of h_{FE1}

Rank	M	L	K
Range	800 to 1600	1200 to 2400	2000 to 3200

Test Conditions: $V_{CE} = 5.0$ V, $I_C = 100$ mA

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

