SEMELAB

MECHANICAL DATA
Dimensions in mm (inches)
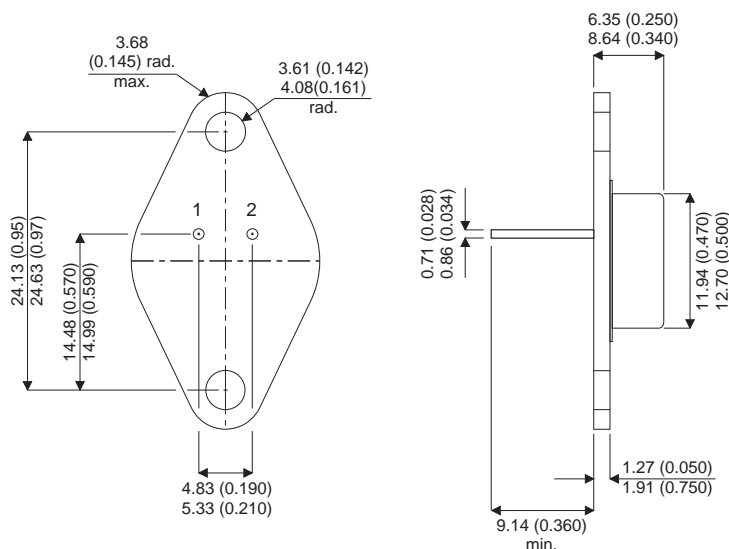
COMPLEMENTARY SILICON MEDIUM POWER TRANSISTORS

3.68 (0.145) rad. max.

3.61 (0.142) 4.08(0.161) rad.

24.13 (0.95) 24.63 (0.97)

14.48 (0.570) 14.99 (0.590)

4.83 (0.190) 5.33 (0.210)

6.35 (0.250) 8.64 (0.340)

0.71 (0.028) 0.86 (0.034)

11.94 (0.470) 12.70 (0.500)

1.27 (0.050) 1.91 (0.750)

9.14 (0.360) min.

TO–66 (TO-213AA)
Pin 1 –Base   Pin 2 –Emitter   Case – Collector

COMPLEMENTARY TRANSISTORS 2N6315 (NPN) AND 2N6317 (PNP)

FEATURES
- **Low Collector Emitter Saturation Voltage**
- **Low Leakage Current**
- **Excellent DC Current Gain**

APPLICATIONS:
Designed for general purpose amplifier and switching applications.

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{CEO}	Collector – Emitter Voltage		60V
V_{CBO}	Collector – Base Voltage		60V
V_{EBO}	Emitter – Base Voltage		5V
I_C	Collector Current	Continuous	7A
		Peak	15A
I_B	Base Current		2A
P_D	Total Dissipation @ T_C = 25°C		90W
	Derate above 25°C		0.515W/°C
T_{STG} , T_J	Operating and Storage Junction Temperature Range		−65 to +200°C
$R_{\theta JC}$	Thermal Resistance – Junction - Case		1.94°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
	OFF CHARACTERISTICS						
$V_{CEO(sus)}$	Collector – Emitter Sustaining Voltage *	I_C = 100mA	I_B = 0	60			V
I_{CEO}	Collector Cut–off Current	V_{CE} = 30V	I_B = 0			0.5	mA
I_{CEX}	Collector Cut–off Current	V_{CE} = 60V	$V_{BE(off)}$ = 1.5V			0.25	mA
			T_C = 150°C			2.0	mA
I_{CBO}	Collector Cut–off Current	V_{CB} = 60V	I_E = 0			0.25	mA
I_{EBO}	Emitter Cut–off Current	V_{EB} = 5V	I_C = 0			1.0	mA
	ON CHARACTERISTICS *						
h_{FE}	DC Current Gain	V_{CE} = 4V	I_C = 0.5A	35			—
		V_{CE} = 4V	I_C = 2.5A	20		100	—
		V_{CE} = 4V	I_C = 7.0A	4			—
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = 4A	I_B = 0.4A			1.0	V
		I_C = 7A	I_B = 1.75A			2.0	V
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	I_C = 7A	I_B = 1.75A			2.5	V
$V_{BE(on)}$	Base – Emitter On Voltage	V_{CE} = 4V	I_C = 2.5A			1.5	V
	DYNAMIC CHARACTERISTICS						
C_{ob}	Output Capacitance	V_{CB} = 10V f = 1MHz	I_E = 0			300	pF
f_T	Current Gain – Bandwidth Product	V_{CE} = 10V I_C = 0.25A f = 1MHz		4.0			MHz
h_{fe}	Small Signal Current Gain	V_{CE} = 4V f = 1kHz	I_C = 0.5A	20			—
	DYNAMIC CHARACTERISTICS						
t_r	Rise Time	V_{CC} = 30V				0.7	μS
t_S	Storage Time	I_C = 2.5A				1.0	μS
t_f	Fall Time	I_{B1} = I_B =0.25A				0.8	μS

Notes

*Pulse test: t_p = 300μs , Duty Cycle = 2%