Pb Free Plating Product

BU508A/BU508D

NPN TYPE TRIPLE DIFFUSED SILICON POWER TRANSISTORS

Features

- ※ Collector-Emitter Sustaining Voltage-Vcex=1500V(min.)
- ※ Stable performances versus operating TEMP variation
- ※ No Damper Diode
- ※ Low base-drive requirement
- ※ High ruggedness

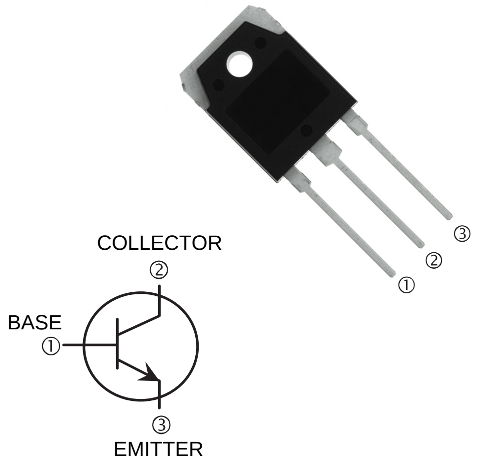
Application

- ※ Large screen colour deflection circuits.
- ※ Ultrasonic equipment system
- ※ Plating Power Supply,Motor Control,UPS and SMPS etc.

Mechanical Data

- ※ Case:TO-3P non-isolated package
- ※ Epoxy: UL 94V-0 rate flame retardant
- ※ Terminals: Solderable per MIL-STD-202 method 208
- ※ Polarity: As per configuration
- ※ Mounting position: Any
- ※ Weight: 6.0 gram approximately

TO-3P pkg outline & internal configuration



Maximum Ratings

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	700	V
Collector-Emitter Voltage (V_{BE} = 0)	V_{CES}	1500	
Emitter-Base Voltage	V_{EBO}	5.0	
Collector Current-Continuous -Peak	I_C	5.0 8.0	A
Base Current-Continuous	I_B	2.5	
Total Power Dissipation at T_C = 25°C Derate above 25°C	P_D	125 1.0	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150	°C

Thermal Characteristics

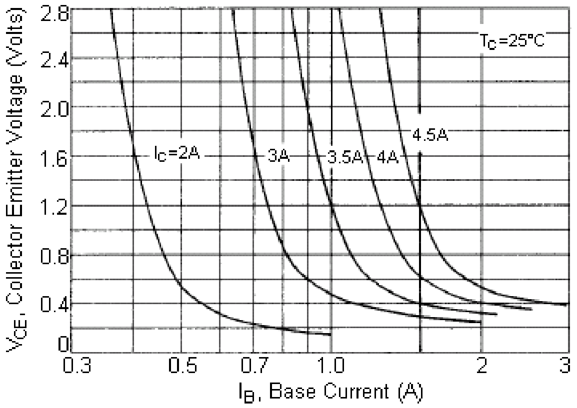
Characteristic	Symbol	Maximum	Unit
Thermal Resistance Junction to Case	$R\theta jc$	1.0	°C/W

Electrical Characteristics (T_c = 25°C unless otherwise noted)

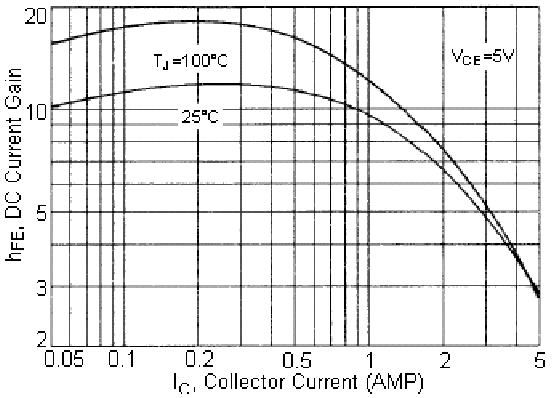
Characteristic		Symbol	Minimum	Maximum	Unit
OFF Characteristics					
Collector-Emitter Sustaining Voltage (1) (I_C = 100mA, I_B = 0)		$V_{CEO(sus)}$	700	-	V
Collector Cut off Current (V_{CE} = 1500V, V_{BE} = 0)		I_{CES}	-	1.0	mA
Emitter Cut off Current (V_{EB} = 5.0V, I_C = 0)	BU508A BU508D	I_{EBO}	-	10 300	
ON Characteristics (1)					
Collector-Emitter Saturation Voltage (I_C = 4.5A, I_B = 2.0A)	BU508A, BU508D	$V_{CE(sat)}$	-	1.0	V
Base-Emitter Saturation Voltage (I_C = 4.5A, I_B = 2.0A)		$V_{BE(sat)}$	-	1.5	
Diode Forward Voltage (I_F = 4.0A)	BU508D	V_F	-	2.0	
Dynamic Characteristics					
Current Gain-Bandwidth Product (I_C = 0.1A, V_{CE} = 5.0V, f = 1.0MHz)		f_T	4.0 (Typical)	-	MHz
Output Capacitance (V_{CE} = 10V, I_E = 0, f = 1.0MHz)		C_{ob}	125 (Typical)	-	pF
Switching Characteristics					
Storage Time	I_C = 4.5A, I_{B1} = 1.4A, L_B = 10µH	t_s	7.0 (Typical)	-	µs
Fall Time		t_f	1.0 (Typical)	-	

(1) Pulse Test: Pulse Width ≤300µs, Duty Cycle ≤2.0%

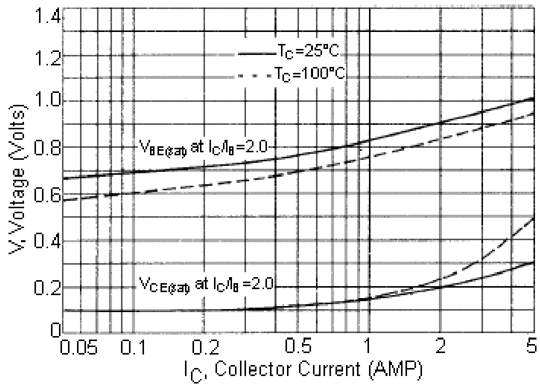
Collector Saturation Region



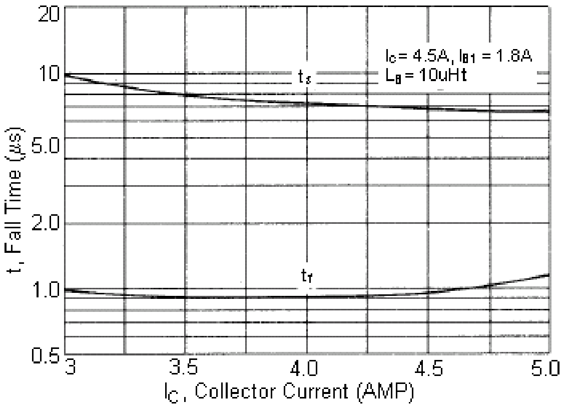
DC Current Gain



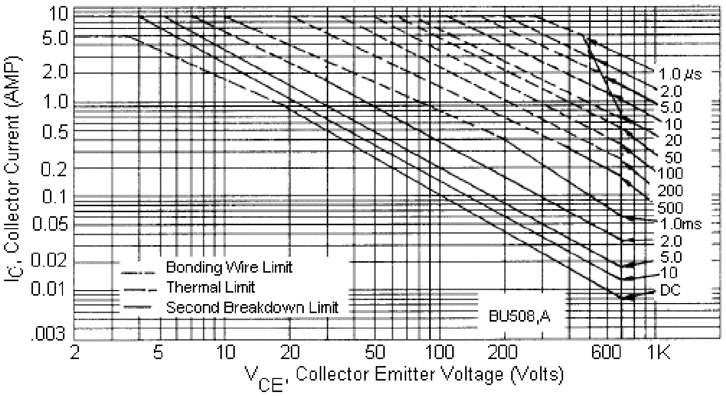
"ON" Voltages



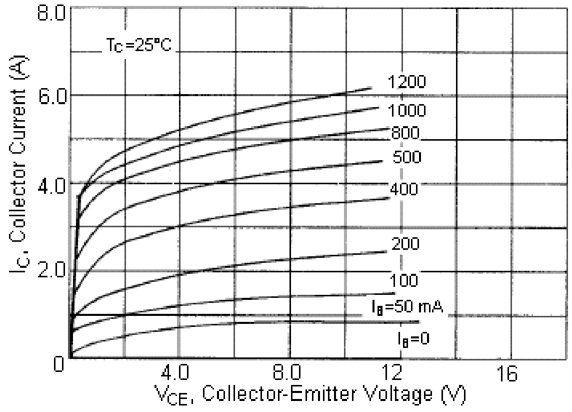
Switching Behaviour Versus I_{CM}



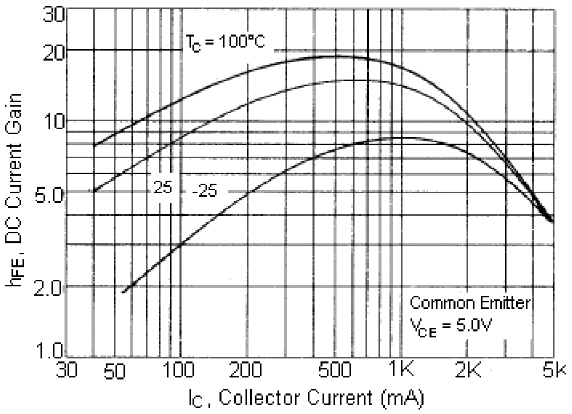
Forward Bias Safe Operating Area



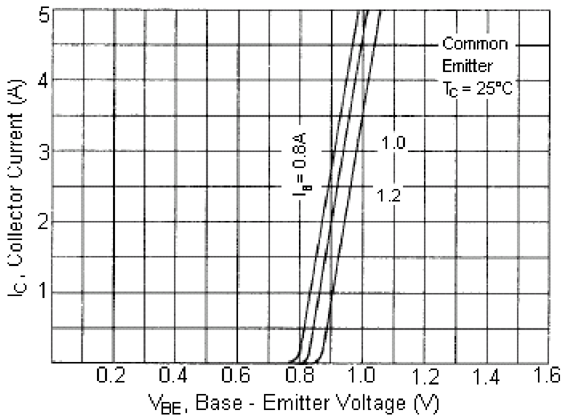
I_C - V_{CE}



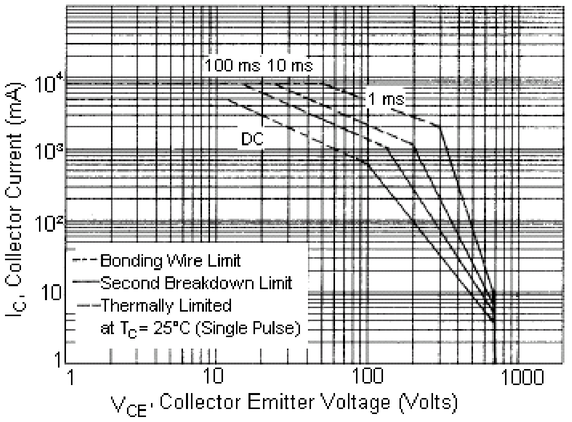
DC Current Gain



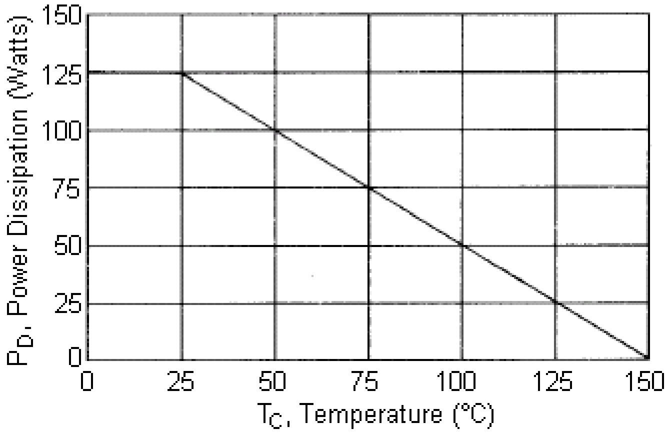
I_C - V_{BE}



Active-Region Safe Operating Area (SOA)

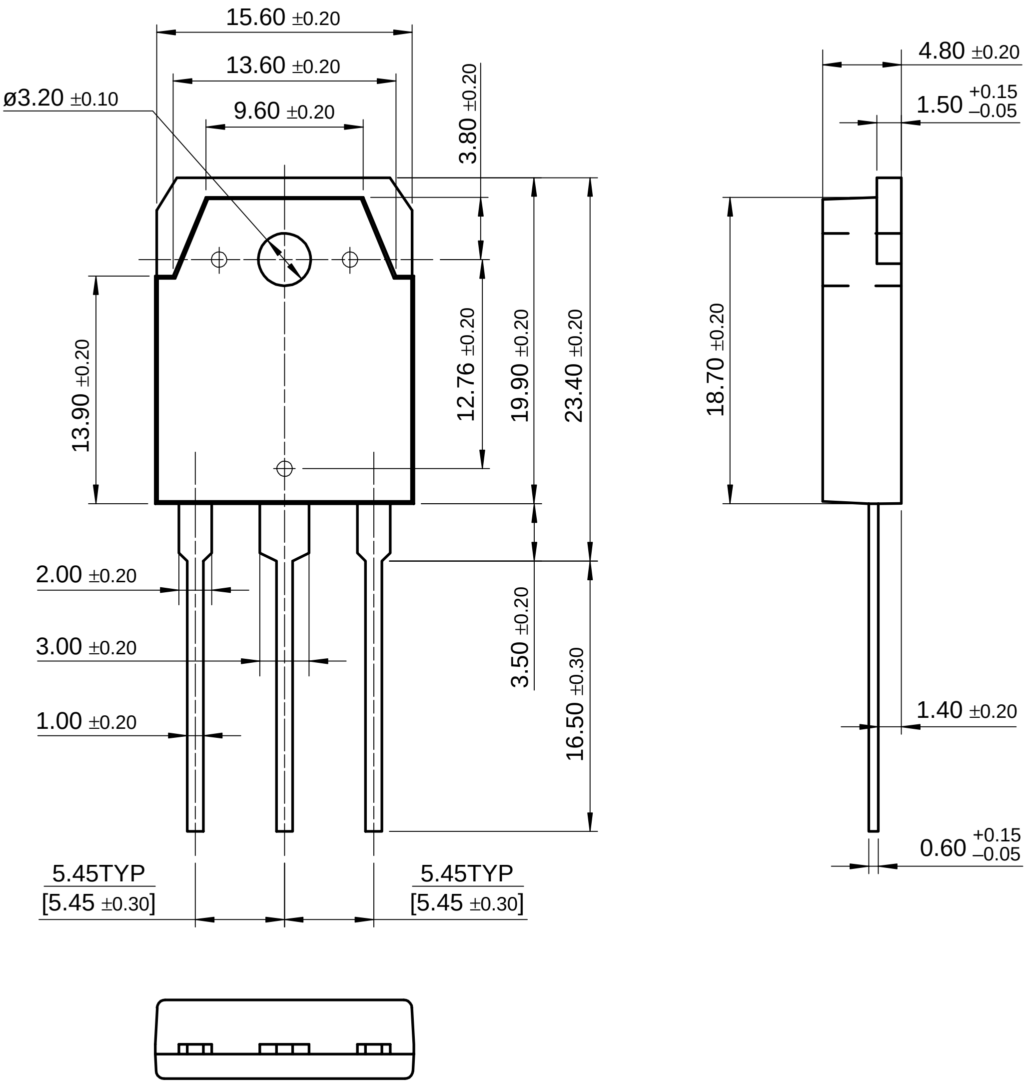


Power Derating



THINKI TO-3P Package Dimensions

TO-3P



Dimensions in Millimeters