

MOTOROLA

SEMICONDUCTOR

TECHNICAL DATA

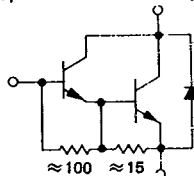
BUT51P

ADVANCE INFORMATION

SWITCHMODE[®] SERIES NPN SILICON POWER DARLINGTON TRANSISTORS

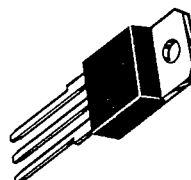
The BUT51P darlington transistor is designed for high-voltage, high-speed, power switching in inductive circuits where fall time is critical. It is particularly suited for line operated switch-mode applications such as :

- Switching Regulators
- Inverters
- Solenoid and Relay Drivers
- Motor Controls
- Deflection Circuits



15 AMPERES NPN SILICON POWER DARLINGTON TRANSISTORS

500 VOLTS- $V_{CE0(sus)}$
100 WATTS
850 VOLTS- V_{CES}



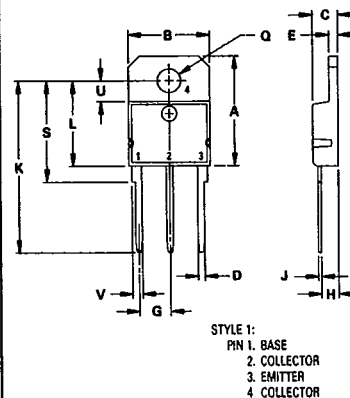
MAXIMUM RATINGS

Rating	Symbol	BUT51P	Unit
Collector-Emitter Voltage	$V_{CE0(sus)}$	500	Vdc
Collector-Emitter Voltage	$V_{CEX(sus)}$	850	Vdc
Collector-Emitter Voltage	V_{CEV}	850	Vdc
Emitter Base Voltage	V_{EB}	8	Vdc
Collector Current — Continuous	I_C	15	Adc
— Peak (1)	I_{CM}	25	
Base Current — Continuous	I_B	2.5	Adc
— Peak (1)	I_{BM}	5	
Free Wheel Diode :			Adc
Forward Current — continous	I_F	15	
— peak	I_{FM}	25	
Total Power Dissipation @ $T_C=25^\circ\text{C}$	P_D	125	Watts
@ $T_C=100^\circ\text{C}$		50	
Derate above 25°C		1	W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to + 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1	$^\circ\text{C/W}$

(1) Pulse Test: Pulse Width = 5 ms, Duty Cycle $\leq 10\%$.



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	19.00	19.60	0.749	0.771
B	14.00	14.50	0.551	0.570
C	4.20	4.70	0.165	0.185
D	1.90	1.30	0.040	0.051
E	1.45	1.65	0.058	0.064
G	5.21	5.72	0.206	0.225
H	2.60	3.00	0.103	0.118
J	0.40	0.60	0.016	0.023
K	28.50	32.00	1.123	1.259
L	14.70	15.30	0.579	0.602
Q	4.00	4.25	0.158	0.167
S	17.50	18.10	0.689	0.712
U	3.40	3.80	0.134	0.149
V	1.50	2.00	0.060	0.078

CASE 340D-01
TO-18 TYPE