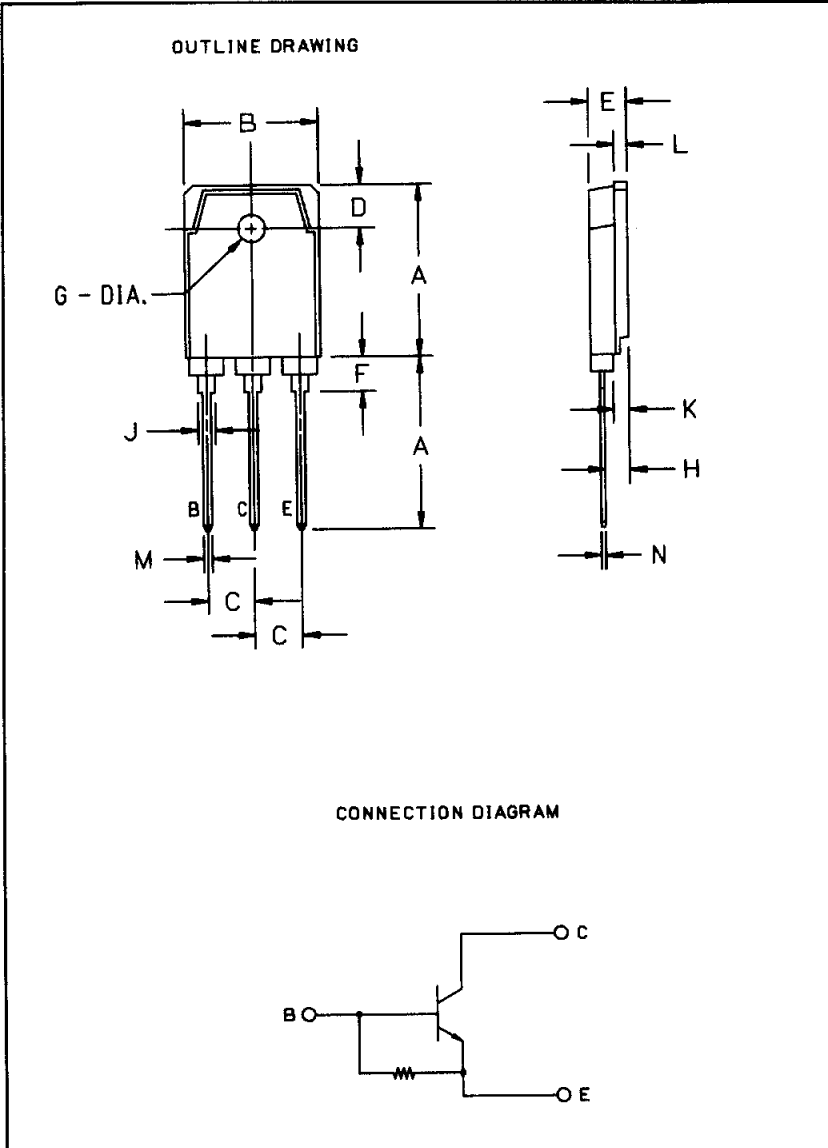


### Base Drive Transistor Module 5 Amperes/1200 Volts



Outline Drawing

Dimensions	Inches	Millimeters
A	0.787	20
B	0.614	15.6
C	0.214 ± 0.008	5.45 ± 0.2
D	0.197	5
E	0.177	4.5
F	1.157	4
G	0.126 ± 0.008 Dia.	3.2 ± 0.2 Dia.

Dimensions	Inches	Millimeters
H	0.110	2.8
J	0.079	2
K	0.071	1.8
L	0.059	1.5
M	0.039	1
N	0.024	0.6

**Description:**

The Powerex Base Drive Transistor Modules are high power devices designed for use in switching applications or base drive amplifiers. The modules are isolated, consisting of one Bi-polar Transistor with a base-to-emitter resistor.

**Features:**

- Non-Isolated Mounting
- Planar Chip
- High Gain ( $h_{FE}$ )
- Base-Emitter Resistor

**Applications:**

- Inverters
- DC Motor Control
- Switching Power Supplies
- AC Motor Control
- Base Drive

**Ordering Information:**

Example: Select the complete eight digit module part number you desire from the table - i.e. KS0312A01 is a 1200 Volt, 5 Ampere Base Drive Transistor Module.

Type	$V_{CE0(sus)}$ Volts (X 100)	Current Rating Amperes (0)
KS03	12	A0



Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

**KS0312A0**  
**Base Drive Transistor Module**  
5 Amperes/1200 Volts

**Absolute Maximum Ratings,  $T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified**

Ratings	Symbol	KS0312A0	Units
Junction Temperature	$T_j$	-40 to 150	$^\circ\text{C}$
Storage Temperature	$T_{\text{stg}}$	-40 to 125	$^\circ\text{C}$
Collector-Emitter Sustaining Voltage, $V_{\text{BE}} = -2\text{VA}$	$V_{\text{CEV(sus)}}$	1200	Volts
Collector-Base Voltage	$V_{\text{CBO}}$	1200	Volts
Emitter-Base Voltage	$V_{\text{EBO}}$	7	Volts
Collector-Emitter Voltage	$V_{\text{CEV}}$	1200	Volts
Continuous Collector Current	$I_{\text{C}}$	5	Amperes
Continuous Base Current	$I_{\text{B}}$	3	Amperes
Power Dissipation	$P_t$	100	Watts
Max. Mounting Torque M3 Mounting Screws	—	3	in.-lb.
Modular Weight (Typical)	—	5	Grams
V Isolation	$V_{\text{RMS}}$	2500	Volts



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**KS0312A0**  
**Base Drive Transistor Module**  
 5 Amperes/1200 Volts

**Electrical Characteristics,  $T_J = 25\text{ }^\circ\text{C}$  unless otherwise specified**

Characteristics		Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector Cutoff Current		$I_{CEV}$	$V_{CE} = 1200V, V_{BE} = -2V$	–	–	1	mA
Emitter Cutoff Current		$I_{EBO}$	$V_{EB} = 7V$	–	–	50	mA
DC Current Gain		$h_{FE}$	$I_C = 2A, V_{CE} = 5.0V$	10	–	–	–
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 2A, I_B = 0.4A$	–	–	1.0	Volts
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 2A, I_B = 0.4A$	–	–	1.5	Volts
Resistive	Turn-on	$t_{on}$	$V_{CC} = 600V$	–	–	1.0	$\mu s$
Load	Storage Time	$t_s$	$I_C = 3A$	–	–	4.0	$\mu s$
Switch Times	Fall Time	$t_f$	$I_{B1} = 0.6, -I_{B2} = 1.2A$	–	–	0.8	$\mu s$

**Thermal and Mechanical Characteristics,  $T_J = 25\text{ }^\circ\text{C}$  unless otherwise specified**

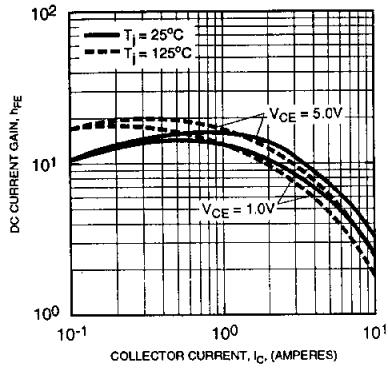
Characteristics		Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Case-to-Sink		$R_{\theta(c-s)}$	–	–	–	0.5	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case		$R_{\theta(j-c)}$	–	–	–	1.25	$^\circ\text{C/W}$



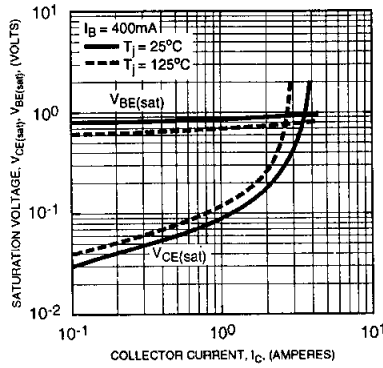
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**KS0312A0**  
**Base Drive Transistor Module**  
5 Amperes/1200 Volts

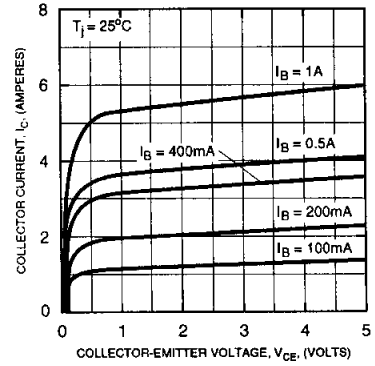
**DC CURRENT GAIN (TYPICAL)**



**SATURATION VOLTAGE (TYPICAL)**



**COMMON EMITTER OUTPUT CHARACTERISTICS (TYPICAL)**



**COMMON EMITTER INPUT CHARACTERISTICS (TYPICAL)**

