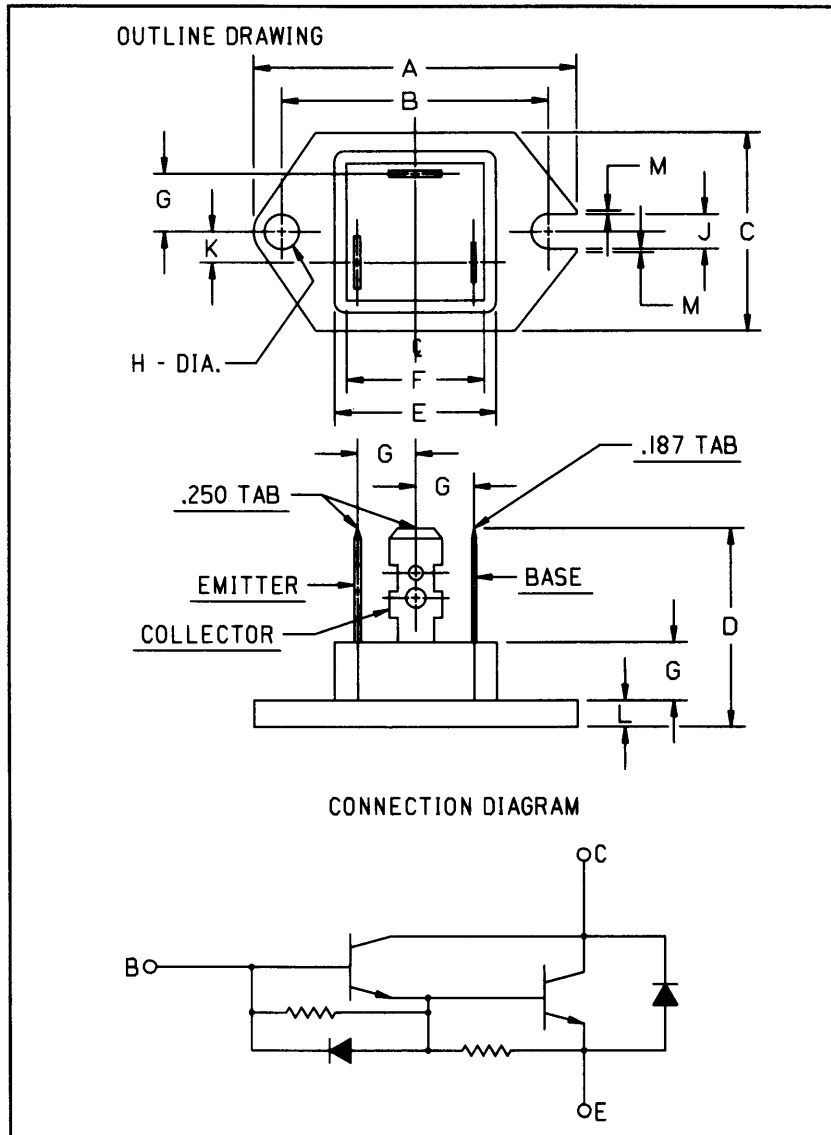


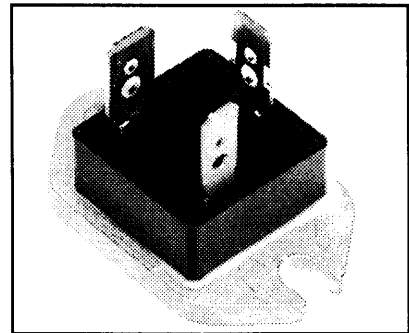
Single Darlington Transistor Module 15 Amperes/600 Volts



Outline Drawing

Dimensions	Inches	Millimeters
A	1.535 Max.	39 Max.
B	1.268 ± 0.008	32.2 ± 0.2
C	0.945 Max.	24 Max.
D	0.945	24
E	0.768 Max.	19.5 Max.
F	0.656	16.6

Dimensions	Inches	Millimeters
G	0.276	7
H	0.165 ± 0.004 Dia.	4.2 ± 0.1 Dia.
J	0.165	4.2
K	0.146	3.7
L	0.126	3.2
M	0.016	0.4



Description:

The Powerex Single Darlington Transistor Modules are high power devices designed for use in switching applications. The modules are isolated, consisting of one Darlington Transistor with a reverse parallel connected high-speed diode and base-to-emitter speed-up diode.

Features:

- ☐ Isolated Mounting
- ☐ Planar Chips
- ☐ Discrete Fast Recovery Feedback Diode
- ☐ High Gain (h_{FE})
- ☐ TAB Quick-Connect Terminals
- ☐ Base-Emitter Speed-up Diode

Applications:

- ☐ Inverters
- ☐ DC Motor Control
- ☐ Switching Power Supplies
- ☐ AC Motor Control

Ordering Information:

Example: Select the complete eight digit module part number you desire from the table - i.e. KS8245A1 is a 450 $V_{CE0(sus)}$ (600 V_{CEV}), 15 Ampere Single Darlington Module.

Type	$V_{CE0(sus)}$ Volts (X 10)	Current Rating Amperes (15)
KS82	45	A1



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

KS8245A1
Single Darlington Transistor Module
 15 Amperes/600 Volts

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

Ratings	Symbol	KS524503	Units
Junction Temperature	T_j	-40 to 150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to 125	$^\circ\text{C}$
Collector-Emitter Sustaining Voltage	$V_{\text{CEO(sus)}}$	450	Volts
Collector-Base Voltage	V_{CBO}	600	Volts
Emitter-Base Voltage	V_{EBO}	7	Volts
Collector-Emitter Voltage	V_{CEV}	600	Volts
Continuous Collector Current	I_C	15	Amperes
Diode Forward Current	I_{FM}	15	Amperes
Continuous Base Current	I_B	0.9	Amperes
Diode Surge Current	I_{FSM}	150	Amperes
Power Dissipation	P_t	100	Watts
Max. Mounting Torque M4 Terminal Screws	—	12	in.-lb.
Module Weight (Typical)	—	25	Grams
V Isolation	V_{RMS}	2000	Volts

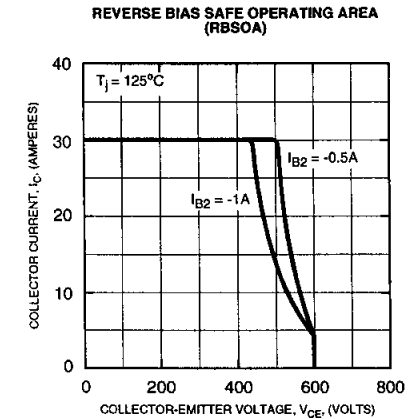
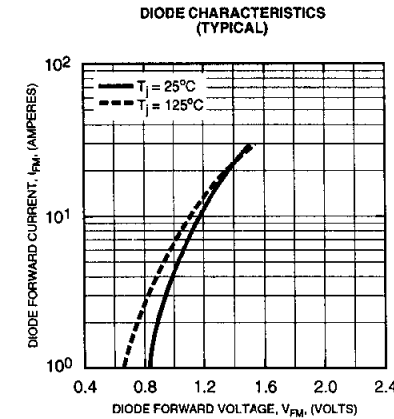
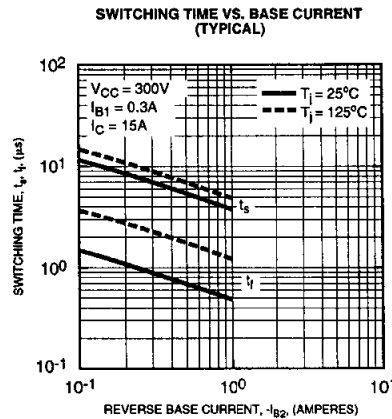
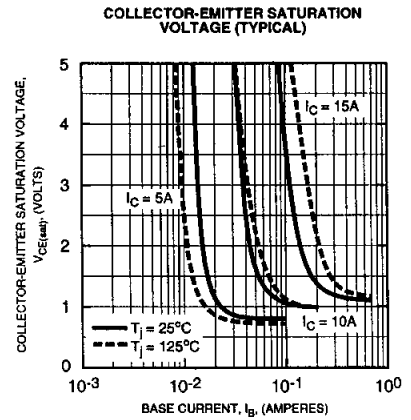
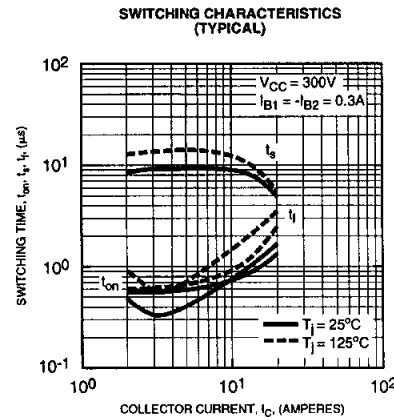
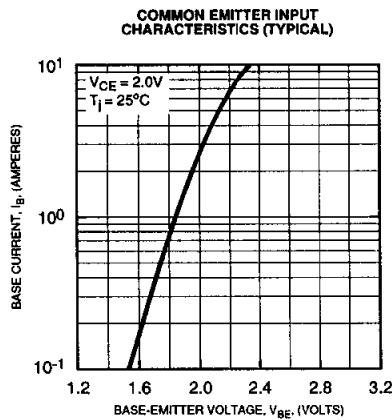
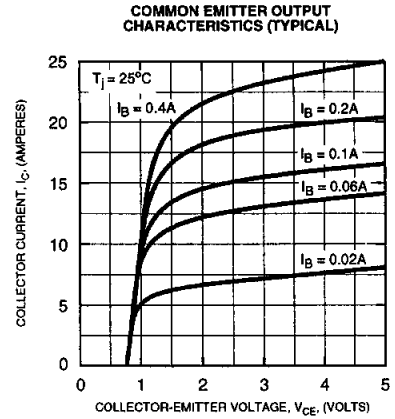
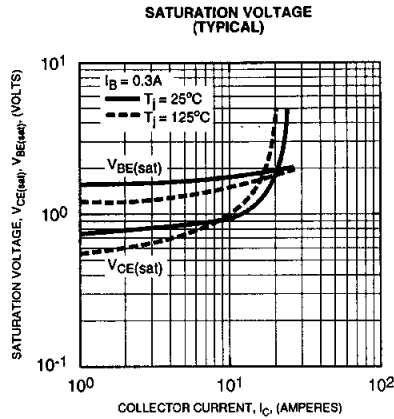
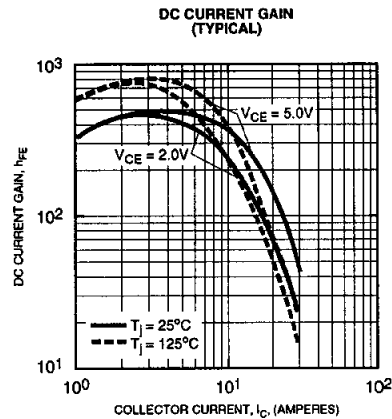
Electrical Characteristics, $T_j = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector Cutoff Current	I_{CEV}	$V_{\text{CE}} = V_{\text{CEV}}, V_{\text{BE}} = -2\text{V}$	—	—	1	mA
		$V_{\text{CE}} = 600\text{V}, V_{\text{BE}} = -2\text{V}, T_C = 125^\circ\text{C}$	—	—	5	mA
Emitter Cutoff Current	I_{EBO}	$V_{\text{EB}} = 7\text{V}$	—	—	50	mA
DC Current Gain	h_{FE}	$I_C = 15\text{A}, V_{\text{CE}} = 2\text{V}$	50	—	—	—
		$I_C = 15\text{A}, V_{\text{CE}} = 5\text{V}$	100	—	—	—
Diode Forward Voltage	V_{FM}	$I_{\text{FM}} = 15\text{A}$	—	—	1.5	Volts
Collector-Emitter Saturation Voltage	$V_{\text{CE(sat)}}$	$I_C = 15\text{A}, I_B = 0.3\text{A}$	—	—	2.0	Volts
Base-Emitter Saturation Voltage	$V_{\text{BE(sat)}}$	$I_C = 15\text{A}, I_B = 0.3\text{A}$	—	—	2.5	Volts
Resistive Turn-on	t_{on}	$V_{\text{CC}} = 300\text{V}$	—	—	1.5	μs
Load Storage Time	t_s	$I_C = 15\text{A}$	—	—	8.0	μs
Switch Times Fall Time	t_f	$I_{\text{B1}} = 0.3\text{A}, I_{\text{B2}} = -0.3\text{A}$	—	—	3.0	μs

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

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Case-to-Sink	$R_{\theta(\text{c-s})}$	—	—	—	0.4	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case	$R_{\theta(\text{j-c})}$	Transistor Part	—	—	1.2	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case	$R_{\theta(\text{j-c})}$	Diode Part	—	—	2.15	$^\circ\text{C/W}$

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