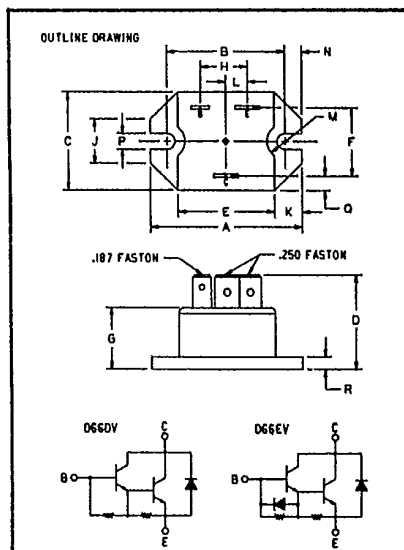
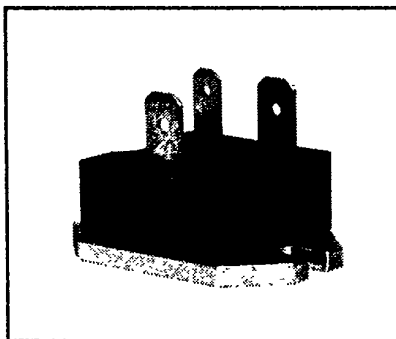


POWEREX**D66DV
D66EV**

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

**Fast Switching
Single Darlington
Transistor Module****50 Amperes****500-600-700 Volts****500-600-700 Volts D66DV, D66EV
Outline Drawing**

Dimension	Inches	Millimeters
A	1.52	38.6
B	1.186 ± .006	30 ± 0.15
C	1.000 ± .015	25.4 ± 0.4
D	.97	24.6
E	.96	24.4
F	.694 ± .010	17.6 ± 0.25
G	.625 ± .020	15.9 ± 0.5
H	.474 ± .010	12 ± 0.25
J	.450	11.4
K	.275	7
L	.220 ± .010	5.6 ± 0.25
M	.180 R	4.6 R
N	.167 ± .010	4.2 ± 0.25
P	.160 ± .010	4.1 ± 0.25
Q	.15	3.8
R	.126 ± .006	3.2 ± 0.15

**D66DV
D66EV****Fast Switching Single Darlington
Transistor Module****50 Amperes/500-600-700 Volts****Description**

Powerex Fast Switching Single Darlington Transistor Modules are designed for use in switching applications. The modules are isolated consisting of one Darlington Transistor with a monolithic reverse parallel connected free-wheel diode.

Features:

- ☐ Isolated Mounting
- ☐ High Gain (h_{FE})
- ☐ Quick Connect Terminals
- ☐ Base Emitter Speed-up Diode (D66EV)

Applications:

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

Ordering Information

Example: Select the complete six digit module part number you desire from the table - i.e. D66EV7 is a 700 Volt, 50 Ampere Fast Switching Single Darlington Module without speed-up diode and D66DV7 is a 700 Volt, 50 Ampere Fast Switching Darlington Module with speed-up diode.

Type	V _{CEV} Volts (×100)	Current Rating Amperes (50)
D66DV/D66EV	5	50
D66DV/D66EV	6	50
D66DV/D66EV	7	50



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D66DV

D66EV

Fast Switching Single Darlington Transistor Module

50 Amperes/500-600-700 Volts

Maximum Ratings $T_J = 25^\circ\text{C}$ unless otherwise specified

	Symbol	D66DV/D66EV	Units
Junction Temperature	T_J	- 40 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	- 40 to 150	$^\circ\text{C}$
Collector-Emitter Sustaining Voltage D66DV5/EV5	$V_{CEO(SUS)}$	400	Volts
Collector-Emitter Voltage $V_{BE} = -1.5\text{V}$ D66DV5/EV5	V_{CEV}	500	Volts
Collector-Emitter Sustaining Voltage D66DV6/EV6	$V_{CEO(SUS)}$	450	Volts
Collector-Emitter Voltage $V_{BE} = -1.5\text{V}$ D66DV6/EV6	V_{CEV}	600	Volts
Collector-Emitter Sustaining Voltage D66DV7/EV7	$V_{CEO(SUS)}$	500	Volts
Collector-Emitter Voltage $V_{BE} = -1.5\text{V}$ D66DV7/EV7	V_{CEV}	700	Volts
Emitter-Base Voltage D66DV	V_{EBO}	8	Volts
Emitter-Base Voltage D66EV	V_{EBO}	5	Volts
Continuous Collector Current	I_C	50	Amperes
Peak (Repetitive) Collector Current	I_{CM}	75	Amperes
Peak (Non-Repetitive) Collector Current	I_{CSM}	125	Amperes
Diode Forward Current	I_{FM}	50	Amperes
Continuous Base Current	I_B	10	Amperes
Peak (Non-Repetitive) Base Current	I_{BM}	20	Amperes
Power Dissipation	P_T	125	Watts
Max. Mounting Torque (M3) Mounting Screws	—	8	in.-lb.
V isolation	V_{RMS}	2500	Volts



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D66DV

D66EV

Fast Switching Single Darlington Transistor Module

50 Amperes/500-600-700 Volts

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

Characteristics	Symbol	Test Conditions	Min.	D66DV, D66EV Typ.	Max.	Units
Collector Cutoff Current	I_{CEV}	$V_{CE} = V_{CEV}(\text{rated}), V_{BE} = -1.5\text{V}$	—	—	1	mA
Collector Cutoff Current	I_{CEV}	$V_{CE} = V_{CEV}(\text{rated}), V_{BE} = -1.5\text{V}$ $T_C = 150^\circ\text{C}$	—	—	2.5	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4.5\text{V}$ $V_{EB} = 1.5\text{V}$	—	—	350	mA
DC Current Gain	h_{FE}	$I_C = 75\text{A}, V_{CE} = 5.0\text{V}$ $I_C = 50\text{A}, V_{CE} = 5.0\text{V}$ $I_C = 20\text{A}, V_{CE} = 5.0\text{V}$	25 50 100	60 135 250	—	—
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 75\text{A}, I_B = 5.0\text{A}$ $I_C = 50\text{A}, I_B = 4.0\text{A}$ $I_C = 20\text{A}, I_B = 2.0\text{A}$	—	2.2 1.7 1.15	3.0 2.0 1.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 75\text{A}, I_B = 5.0\text{A}$ $I_C = 50\text{A}, I_B = 4.0\text{A}$ $I_C = 20\text{A}, I_B = 2.0\text{A}$	—	2.8 2.45 1.95	3.5 3.0 2.5	V
Delay Time*	t_d	$V_{CC} = 250\text{V}, I_C = 50\text{A}$ $I_{B1} = 2.5\text{A}, -I_{B2} = 5\text{A}$	—	0.09	0.5	μs
Rise Time*	t_r		—	0.5	1.0	μs
Storage Time*	t_s		—	2.55 2.0	5.0 3.0	μs
Fall Time*	t_f	$t_p = 50 \mu\text{sec}$	—	1.4 .64	3.0 1.0	μs
Diode Forward Voltage	V_{FM}	$I_{FM} = 25\text{A}$ $I_{FM} = 50\text{A}$ $I_{FM} = 50\text{A}, T_J = 150^\circ\text{C}$	—	1.95 2.6 2.3	3.20 3.80 3.50	V
Reverse Recovery Time	t_{rr}	$I_{FM} = 50\text{A}, di/dt = 25\text{A}/\mu\text{sec}$ $R_{BIE} = .25\Omega$	—	3.85	10.0	μs
Forward Turn-On Time	t_{ON}	$I_{FM} = 50\text{A}, di/dt = 100\text{A}/\mu\text{sec}$	—	0.75	1.5	μs
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Transistor Part	—	—	1.0	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Diode Part	—	—	1.0	$^\circ\text{C}/\text{W}$

* Resistive Load.



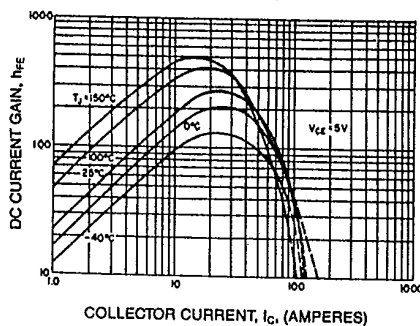
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D66DV

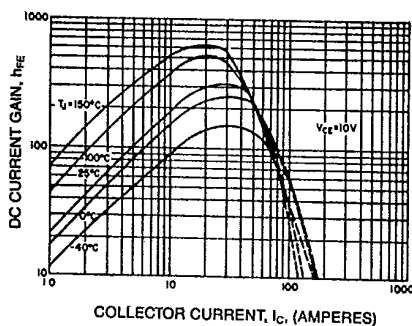
D66EV

Fast Switching Single Darlington Transistor Module
50 Amperes/500-600-700 Volts

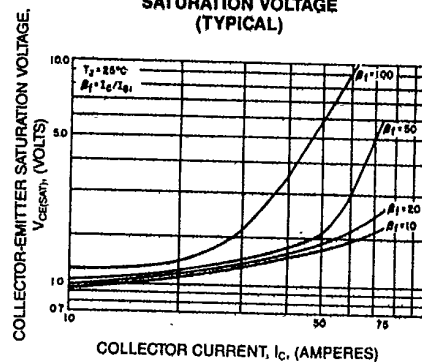
DC CURRENT GAIN
(TYPICAL)



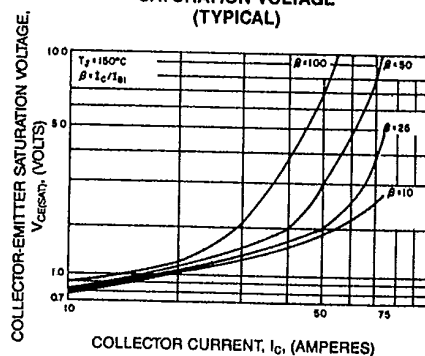
DC CURRENT GAIN
(TYPICAL)



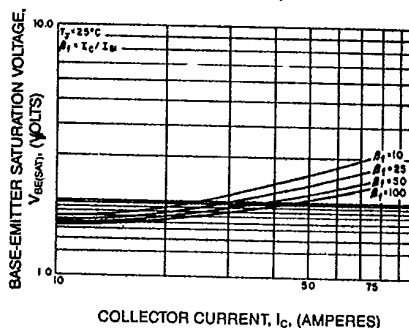
SATURATION VOLTAGE
(TYPICAL)



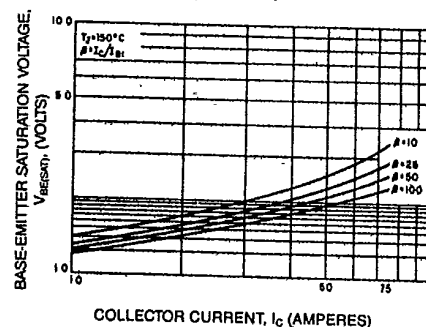
SATURATION VOLTAGE
(TYPICAL)



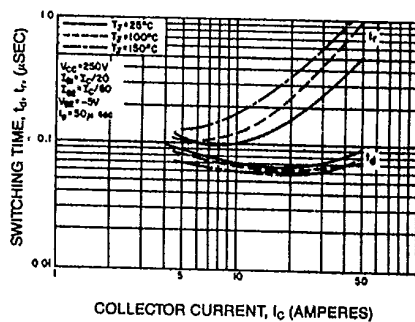
SATURATION VOLTAGE
(TYPICAL)



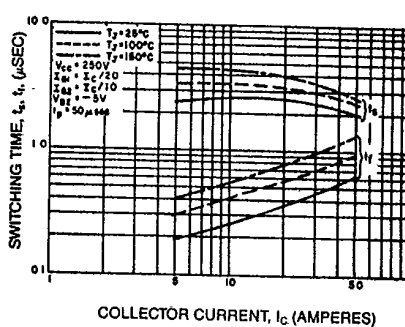
SATURATION VOLTAGE
(TYPICAL)



SWITCHING CHARACTERISTICS
(TYPICAL)



SWITCHING CHARACTERISTICS
(TYPICAL)



COLLECTOR-EMITTER SATURATION
VOLTAGE (TYPICAL)

