

BTW67 and BTW69 Series

STANDARD 50A SCRs

MAIN FEATURES:

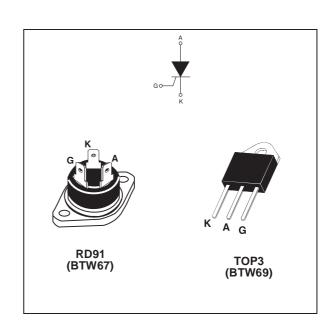
Symbol	Value	Unit
I _{T(RMS)}	50	Α
V _{DRM} /V _{RRM}	600 to 1200	V
I _{GT}	80	mA

DESCRIPTION

Available in high power packages, the BTW67 / BTW69 Series is suitable in applications where power handling and power dissipation are critical, such as solid state relays, welding equipment, high power motor control.

Based on a clip assembly technology, they offer a superior performance in surge current handling capabilities.

Thanks to their internal ceramic pad, they provide high voltage insulation (2500V RMS), complying with UL standards (file ref: E81734).



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit			
I _{T(RMS)}	RMS on-state current	RD91	Tc = 70°C	50	Α	
	(180° conduction angle)		Tc = 75°C	30	A	
I _{T(AV)}	Average on-state current	RD91	Tc = 70°C	32	А	
	(180° conduction angle)		Tc = 75°C	32	^	
I _{TSM}	Non repetitive surge peak on-state current	tp = 8.3 ms	Tj = 25°C	610	А	
		tp = 10 ms	1) - 25 0	580		
l ² t	I ² t Value for fusing	1680	A ² S			
dl/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, tr $\leq 100 \text{ ns}$	F = 60 Hz	Tj = 125°C	50	A/µs	
I _{GM}	Peak gate current	tp = 20 μs	Tj = 125°C	8	Α	
P _{G(AV)}	Average gate power dissipation	1	W			
T _{stg} Tj	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	°C	
V _{RGM}	Maximum peak reverse gate voltage	5	V			

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BTW67 and BTW69 Series

ELECTRICAL CHARACTERISTICS (Tj = 25°C, unless otherwise specified)

Symbol	Test Condition	Value	Unit		
I _{GT}			MIN.	8	^
	$V_D = 12 V$ $R_L = 33 \Omega$		MAX.	80	mA
V _{GT}			MAX.	1.3	V
V _{GD}	$V_D = V_{DRM}$ $R_L = 3.3 \text{ k}\Omega$	Tj = 125°C	MIN.	0.2	V
I _H	I _T = 500 mA Gate open	MAX.	150	mA	
ΙL	I _G = 1.2 I _{GT}		MAX.	200	mA
dV/dt	V _D = 67 % V _{DRM} Gate open	Tj = 125°C	MIN.	1000	V/µs
V _{TM}	I _{TM} = 100 A tp = 380 μs	Tj = 25°C	MAX.	1.9	V
V _{t0}	Threshold voltage	Tj = 125°C	MAX.	1.0	V
R _d	Dynamic resistance	Tj = 125°C	MAX.	8.5	mΩ
I _{DRM}	Vanue Vanu	Tj = 25°C	MAX.	10	μΑ
I _{RRM}	$V_{DRM} = V_{RRM}$ $T_{j} = 125^{\circ}C$			5	mA

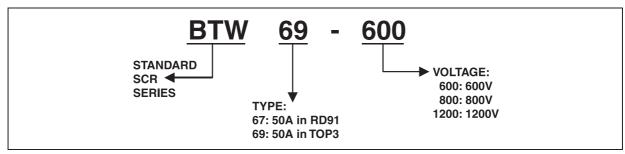
THERMAL RESISTANCES

Symbol	Parameter			Unit
R _{th(j-c)}	Junction to case (DC)	RD91 (Insulated)	1.0	°C/W
		TOP3 Insulated	0.9	
R _{th(j-a)}	Junction to ambient	TOP3 Insulated	50	°C/W

PRODUCT SELECTOR

Part Number		Voltage (xxx)		Sensitivity	Package	
	600 V	800 V	1200 V	,		
BTW67-xxx	Х	Х	Х	80 mA	RD91	
BTW69-xxx	Х	Х	Х	80 mA	TOP3 Ins.	

ORDERING INFORMATION



OTHER INFORMATION

Part Number	Marking	Weight	Base Quantity	Packing mode	
BTW67-xxx	BTW67xxx	20.0 g	25	Bulk	
BTW69-xxx	BTW69xxx	4.5 g	120	Bulk	

Note: xxx = voltage

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Fig. 1: Maximum average power dissipation versus average on-state current.

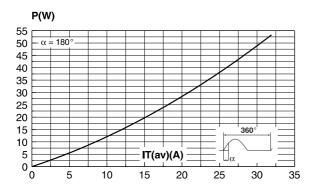


Fig. 3: Relative variation of thermal impedance versus pulse duration.

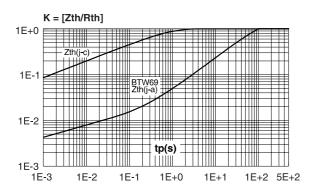


Fig. 5: Surge peak on-state current versus number of cycles.

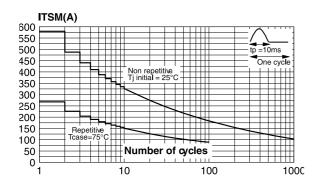


Fig. 2: Average and D.C. on-state current versus case temperature.

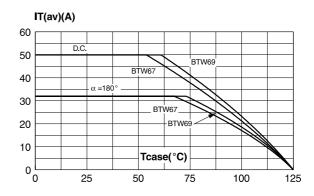


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature.

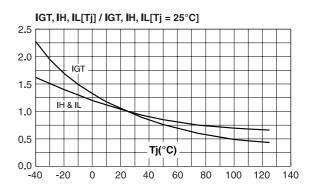
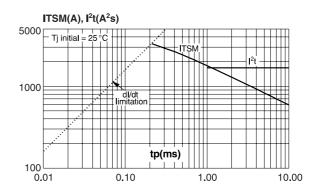
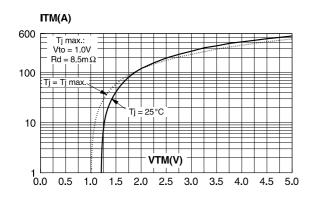


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms, and corresponding value of l^2t .



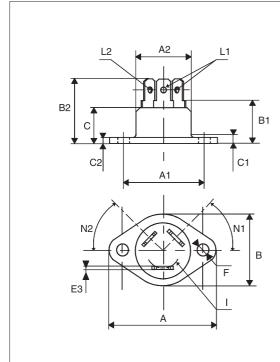
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Fig. 7: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA

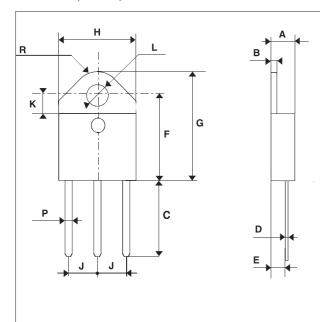
RD91 (Plastic)



	DIMENSIONS						
REF.	Millin	neters	Inc	ches			
	Min.	Max.	Min.	Max.			
Α		40.00		1.575			
A1	29.90	30.30	1.177	1.193			
A2		22.00		0.867			
В		27.00		1.063			
B1	13.50	16.50	0.531	0.650			
B2		24.00		0.945			
С		14.00		0.551			
C1		3.50		0.138			
C2	1.95	3.00	0.077	0.118			
E3	0.70	0.90	0.027	0.035			
F	4.00	4.50	0.157	0.177			
I	11.20	13.60	0.441	0.535			
L1	3.10	3.50	0.122	0.138			
L2	1.70	1.90	0.067	0.075			
N1	33°	43°	33°	43°			
N2	28°	38°	28°	38°			

PACKAGE MECHANICAL DATA

TOP3 Ins.(Plastic)



	DIMENSIONS						
REF.	. Millimeters		Inches				
	Min.	Тур.	Max.	Min.	Тур.	Max.	
Α	4.4		4.6	0.173		0.181	
В	1.45		1.55	0.057		0.061	
С	14.35		15.60	0.565		0.614	
D	0.5		0.7	0.020		0.028	
Е	2.7		2.9	0.106		0.114	
F	15.8		16.5	0.622		0.650	
G	20.4		21.1	0.815		0.831	
Н	15.1		15.5	0.594		0.610	
J	5.4		5.65	0.213		0.222	
K	3.4		3.65	0.134		0.144	
L	4.08		4.17	0.161		0.164	
Р	1.20		1.40	0.047		0.055	
R		4.60			0.181		

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