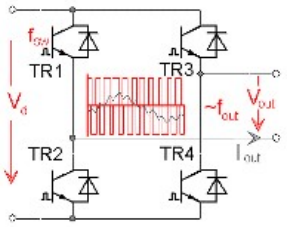
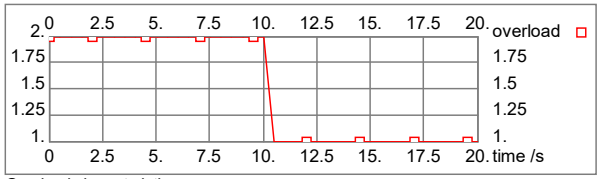
Project :

Topology :	DC/AC
Circuit :	B2I
User	somebody



Circuit :

V_d	1000 V		
V_{out}	850 V	f_{out}	50 Hz
I_{out}	24 A	Cos phi	0.95
P_{out}	19.00 kW	f_{sw}	10.0 kHz
Overload Factor	2.00	Overload Duration	10 s
$f_{min\ out}$	2.00 Hz	$V_{min\ out}$	116 V



Overload characteristic

Device :

Product Line	SEMITRANS
Name	SKM800GA126D
Max. Junction Temperature	150 °C
Use Maximum Values	No

	Transistor		Diode	
	E_{tr}	160.00 mJ (@600V)	E_d	59.00 mJ
	$V_{CE0.125}$	0.90 V	$V_{T0.125}$	0.80 V
	$r_{c.125}$	1.84 mOhm	$r_{T.125}$	1.50 mOhm
	$V_{ce.sat}$	2.00 V	V_f	1.70 V
	I_c	600.00 A	I_f	600.00 A
	$R_{th(j-c)}$	0.042 K/W	$R_{th(j-c)}$	0.090 K/W
	$R_{th(c-s)}$	0.038 K/W		
Data set from	2005/08/23			

Cooling :

Ambient Temperature	55 °C
Number of switches per heat sink	4
Number of parallel devices on the same heat sink	1
Additional power source at this heat sink	0 W
Semikron - Heat sink	P14_120
Correction Factor	1.00
Cooling Method	Forced Air Cooling
Flow rate	192 m^3/h
$R_{th\ (s-a)}$	0.074 K/W

Losses and Temperatures:

	Rated Current	Overload	Min. Frequency and Overload
$P_{cond\ tr}$	10 W	21 W	12 W
$P_{sw\ tr}$	53 W	110 W	110 W
P_{tr}	63 W	131 W	122 W
$P_{cond\ d}$	0.49 W	0.96 W	8.67 W
$P_{sw\ d}$	42 W	68 W	69 W
P_d	42 W	69 W	78 W
P_{tot}	422 W	802 W	801 W
	Average Values	Average Values	Maximum Values
T_s	86 °C	91 °C	90 °C
T_c	90 °C	98 °C	98 °C

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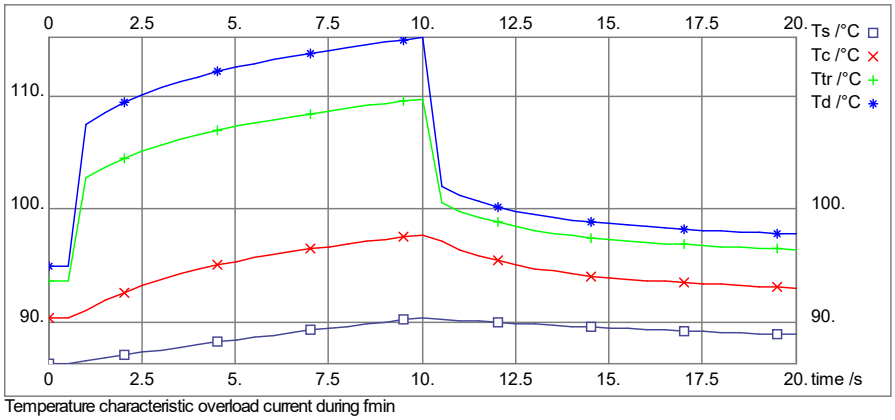
Internet:http://www.semikron.com

T_{tr}	93 °C	103 °C	110 °C
T_d	94 °C	104 °C	115 °C



Temperature characteristic overload current during fmin

Evaluation:

This configuration works fine.

Driver :

Name	$I_{out(av)}$ /mA	$\hat{I}_{out}$ /A	V_{isol} /kV	$V_{ce\ max}$ /V	R_{gmin} / Ohm	Channels
2x SKHI23/12 R	50	8	2.5	1200	2.7	2
2x SKHI24 R	80	15	4.0	1200	1.5	2
2x SKYPER 32 R or SKYPER 32PRO R (1	50	15	4.0	1200	1.5	2

Notes

1) SKYPER 32 R with external boost capacitors