

myPower online Design Center

Featuring IRAM Analysis Software



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Prepared by:

Dan Barsell

Design Services Applications Engineer

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POWER TO LEAD

Welcome to MyPower
International Rectifier's premier site for power

Power Factor Correction



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Simple circuit design
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Improve circuit efficiency
Compare MOSFETs
Calculate all part values
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	Motion Control

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Tool to help engineers evaluate IRAM modules

POWER TO LEAD

Component ? IRAMS06UP60A | IRAMS10UP60B | IRAMX20UP60A

Common Parameters ?

Displacement Power Factor	0.6	Modulation Index	0.8
Displacement Angle [rad]	0.93	Switching Voltage [V]	400
Modulation Frequency [Hz]	50	Max Junction Temperature [°C]	150

Reset Analyze All

Switching Frequency

Case Temperature [°C]	100	110	120
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Analysis ?

Max Switching Frequency [kHz]	20
Step [kHz]	2

Analyze

Component Comparison ?

Switching Frequency [kHz]	20	15	10
Max Current [A]	15.0		
Step [A]	1.5		

Analyze

Power Loss Analysis ?

Current [A]	10	9	8
Max Switching Frequency [kHz]	20		
Step [kHz]	2		

Analyze

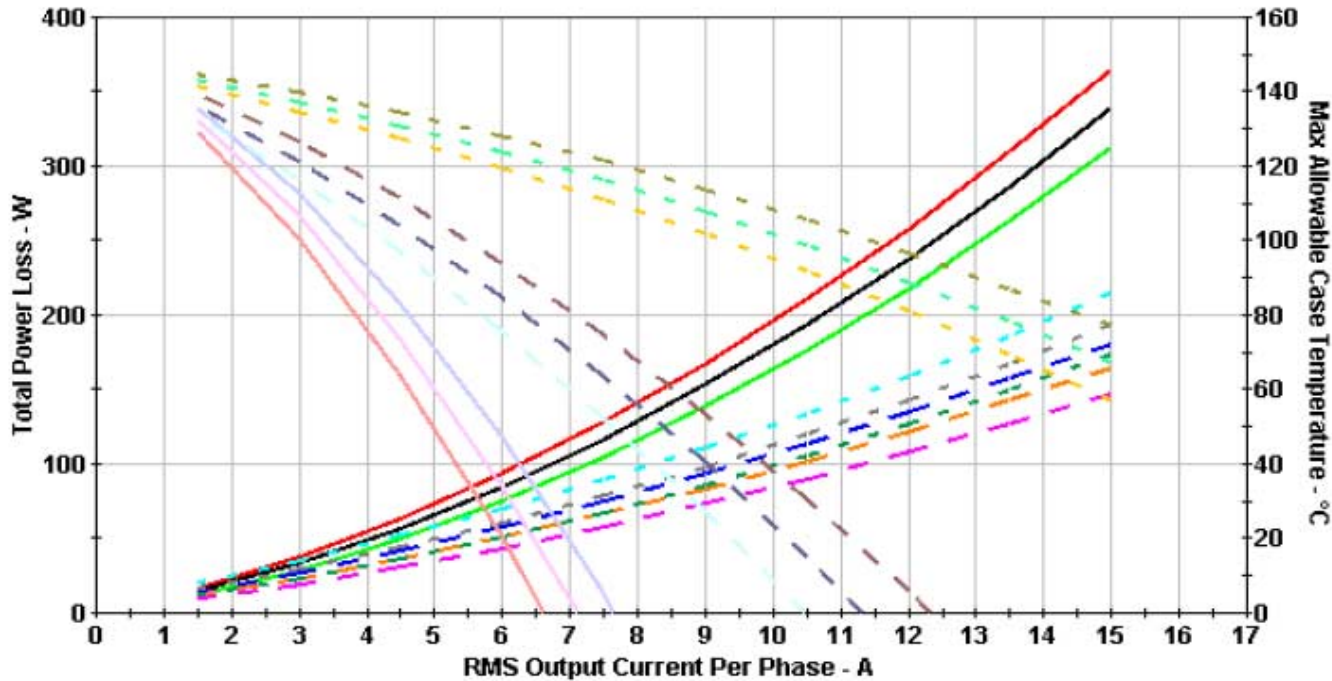
Callout Box:

- Compare 3 modules
- Input your parameters
- Compare case temps
- Compare switching frequencies
- Compare power loss at different currents

Component Comparison

POWER TO LEAD

$V_{bus} = 400V$, $T_j = 150\text{ }^\circ\text{C}$, Modulation Depth = 0.8@50Hz, PF = 0.6



- | | | |
|----------------------------|----------------------------|--------------------------|
| Loss: IRAMS06UP60A, 20 kHz | Loss: IRAMX20UP60A, 20 kHz | Tc: IRAMS10UP60B, 20 kHz |
| Loss: IRAMS06UP60A, 15 kHz | Loss: IRAMX20UP60A, 15 kHz | Tc: IRAMS10UP60B, 15 kHz |
| Loss: IRAMS06UP60A, 10 kHz | Loss: IRAMX20UP60A, 10 kHz | Tc: IRAMS10UP60B, 10 kHz |
| Loss: IRAMS10UP60B, 20 kHz | Tc: IRAMS06UP60A, 20 kHz | Tc: IRAMX20UP60A, 20 kHz |
| Loss: IRAMS10UP60B, 15 kHz | Tc: IRAMS06UP60A, 15 kHz | Tc: IRAMX20UP60A, 15 kHz |
| Loss: IRAMS10UP60B, 10 kHz | Tc: IRAMS06UP60A, 10 kHz | Tc: IRAMX20UP60A, 10 kHz |

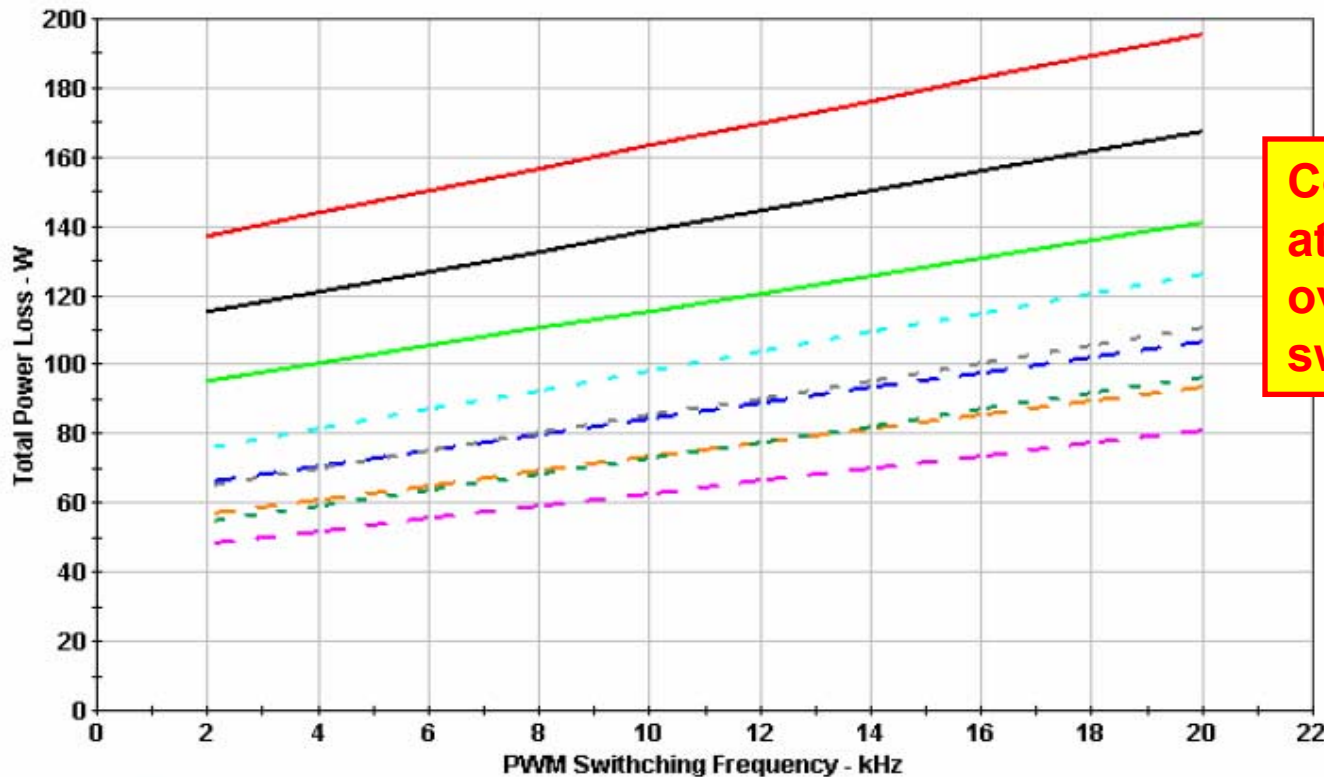
Quickly shows which devices can be used & ones that cannot!



Power loss vs Switch Freq.

POWER TO LEAD

$V_{bus} = 400V$, $T_j = 150\text{ }^\circ\text{C}$, Modulation Depth = 0.8@50Hz, PF = 0.6

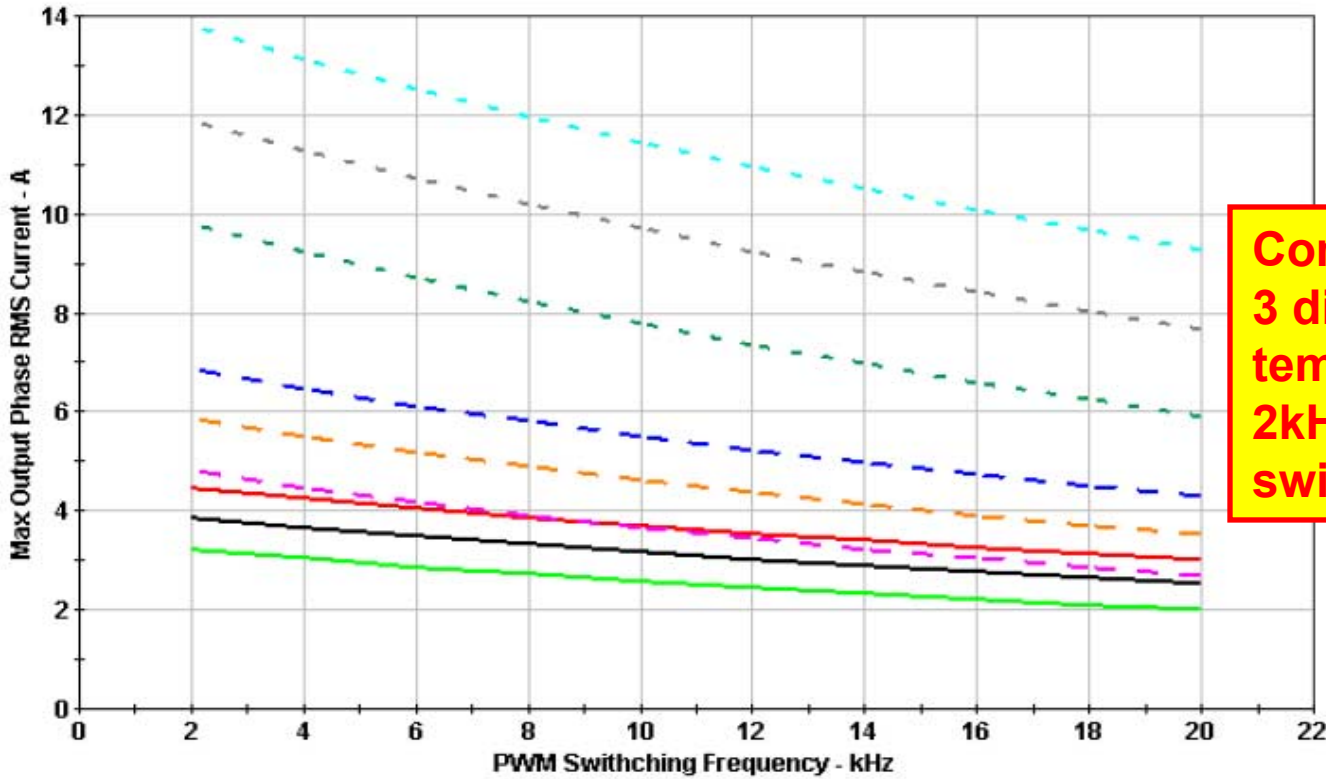


Compare 3 modules at 3 load currents over a 10:1 range of switching frequency!

Phase current vs Switch Freq.

POWER TO LEAD

$V_{bus} = 400V$, $T_j = 150\text{ }^\circ\text{C}$, Modulation Depth = 0.8@50Hz, PF = 0.6



Compare 3 modules at 3 different case temperatures from 2kHz to 20kHz switching frequency!

More Data:

IRAMX20UP60A

20 kHz			15 kHz			10 kHz		
I [A]	Pinverter [W]	Tc [°C]	I [A]	Pinverter [W]	Tc [°C]	I [A]	Pinverter [W]	Tc [°C]
15.0	214	57	15.0	194	67	15.0	173	77
13.5	186	69	13.5	167	78	13.5	149	87
12.0	159	81	12.0	142	89	12.0	126	97
10.5	134	92	10.5	119	99	10.5	105	106
9.0	111	102	9.0	98	108	9.0	85	114
7.5	89	111	7.5	78	116	7.5	67	121
6.0	69	120	6.0	60	124	6.0	51	128
4.5	51	127	4.5	44	131	4.5	36	134
3.0	35	134	3.0	29	137	3.0	23	140
1.5	20	141	1.5	16	143	1.5	12	145

IRAMS10UP60B

I = 10.0 A		I = 9.0 A		I = 8.0 A	
fsw [kHz]	Pinverter [W]	fsw [kHz]	Pinverter [W]	fsw [kHz]	Pinverter [W]
20	107	20	93	20	81
18	102	18	89	18	77
16	98	16	85	16	74
14	93	14	81	14	70
12	89	12	77	12	66
10	84	10	73	10	63
8	80	8	69	8	59
6	75	6	65	6	55
4	71	4	61	4	52
2	66	2	57	2	48

IRAMX20UP60A

100.0 °C		110.0 °C		120.0 °C	
fsw [kHz]	Irms [A]	fsw [kHz]	Irms [A]	fsw [kHz]	Irms [A]
20	9.3	20	7.7	20	5.9
18	9.7	18	8.0	18	6.2
16	10.1	16	8.4	16	6.6
14	10.5	14	8.8	14	7.0
12	11.0	12	9.2	12	7.4
10	11.4	10	9.7	10	7.8
8	12.0	8	10.2	8	8.2
6	12.5	6	10.7	6	8.7
4	13.1	4	11.3	4	9.2
2	13.8	2	11.9	2	9.8

POWER TO LEAD

Data is also available in text format to compare:

- Switching frequency
- Load current
- Case temperature
- Input Power
- Different modules

