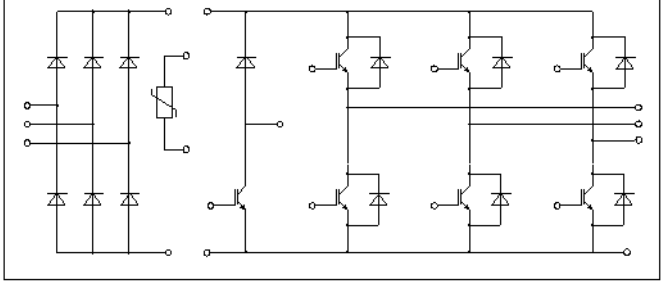
MG15P12E1



1200V
15A

Motor Drivers
AC and DC servo drive amplifier
UPS (Uninterruptible Power Supplies)

Circuit



Low switching losses
Low $V_{CE(sat)}$ with positive temperature coefficient
Including fast & soft recovery anti-parallel FWD
Low inductance case
High short circuit capability(10us)
Maximum junction temperature 175

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Collector-Emitter Voltage	V_{CES}	V_{GE}=0V, I_C=1mA, T_{vj}=25	1200	V
Continuous Collector Current	I_C	T_C=100 T_{vjmax} 175	15	A
Repetitive Peak Collector Current	I_{CRM}	t_p=1ms	30	A
Gate-Emitter Voltage	V_{GES}	T_{vj}=25	20	V
Total Power Dissipation	P_{tot}	T_C=25 T_{vjmax}=175	130	W

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Turn-on Delay Time	$t_{d(on)}$	I_C=15A V_{CE}=600V V_{GE}=±15V R_G=39Ω T_{vj}=150		60		ns
Rise Time	t_r			32		ns
Turn-off Delay Time	$t_{d(off)}$			89		ns
Fall Time	t_f			319		ns
Energy Dissipation During Turn-on Time	E_{on}			2.15		mJ
Energy Dissipation During Turn-off Time	E_{off}			1.13		mJ
SC Data	I_{sc}	t_p≤10us,V_{GE}=15V,T_{vj}=150 , V_{CC}=900V,V_{CEM}≤1200V		55		A

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Repetitive Peak Reverse Voltage	V_{RRM}	T_{vj}=25	1200	V
Continuous DC Forward Current	I_F		10	

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Repetitive Peak Reverse Voltage	V_{RRM}	T_{vj}=25	1600	V
Average output Current 50/60Hz, sine wave	$I_{F(AV)}$	T_C=100	20	A
Maximum RMS Current at Rectifier Output	I_{RMSM}	T_C=100	40	A
Surge Forward Current	I_{FSM}	V_R=0V,t_p=10ms,T_{vj}=25	330	A
		V_R=0V,t_p=10ms,T_{vj}=150	280	A
I^2t-value	I^2t	V_R=0V,t_p=10ms,T_{vj}=25	520	A^2s
		V_R=0V,t_p=10ms,T_{vj}=150	390	A^2s

Diode Forward Voltage	V_F	I_F=15A,T_{vj}=150		0.96		V
Reverse Current	I_R	T_{vj}=150 ,V_R=1600V			1.0	mA

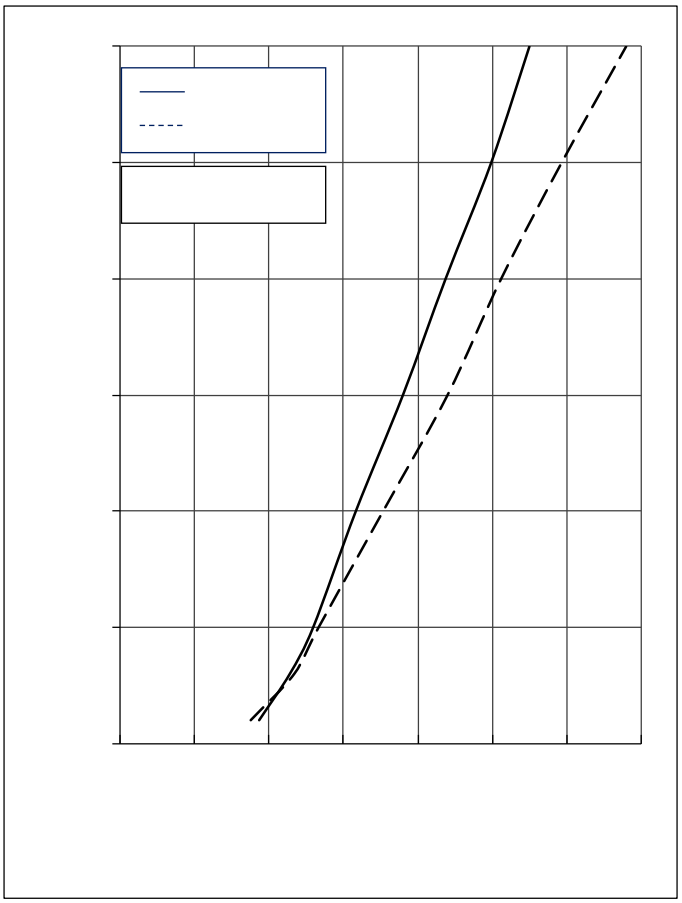
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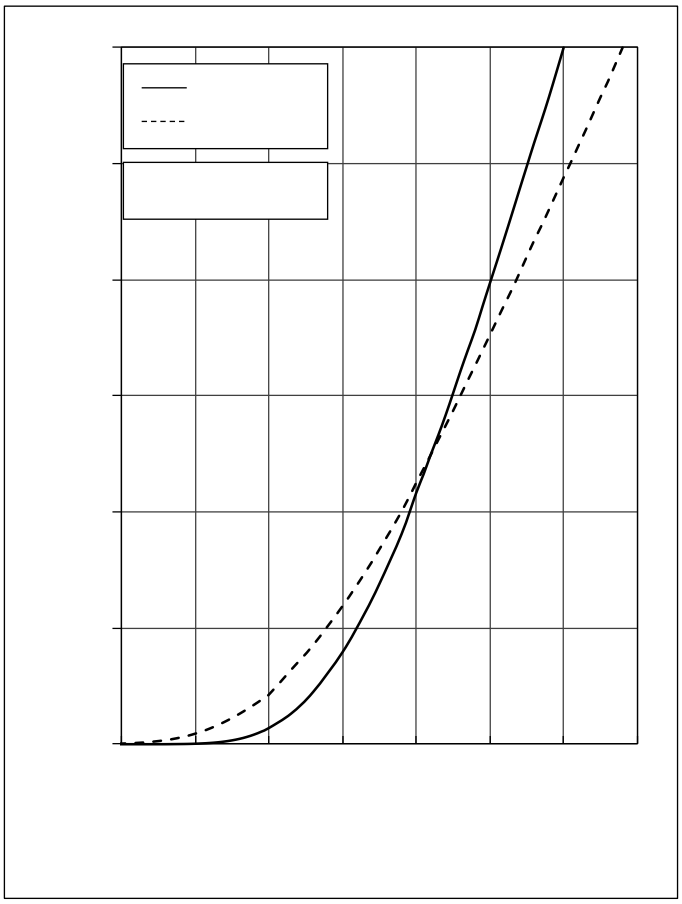
Rated Resistance	R_{25}			5.0		kΩ
Deviation of R100	R/R	T_C=100,R_{100}=493.3Ω	-5		5	%
Power Dissipation	P_{25}				20.0	mW
B-value	$B_{25/50}$	$R_2=R_{25}\exp[B_{25/50}(1/T_2-1/(298.15\ K))]$		3375		K

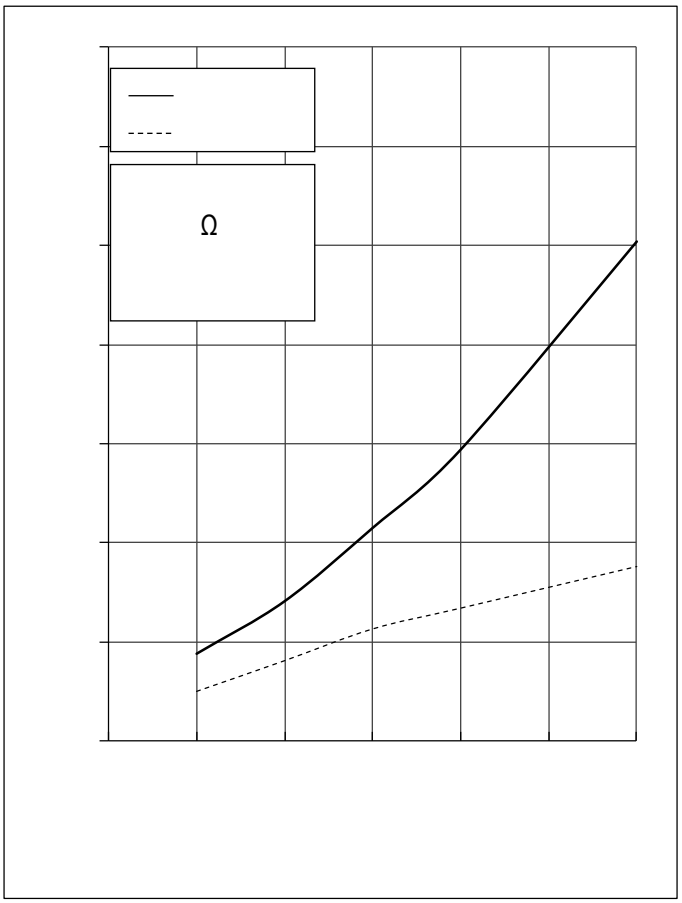
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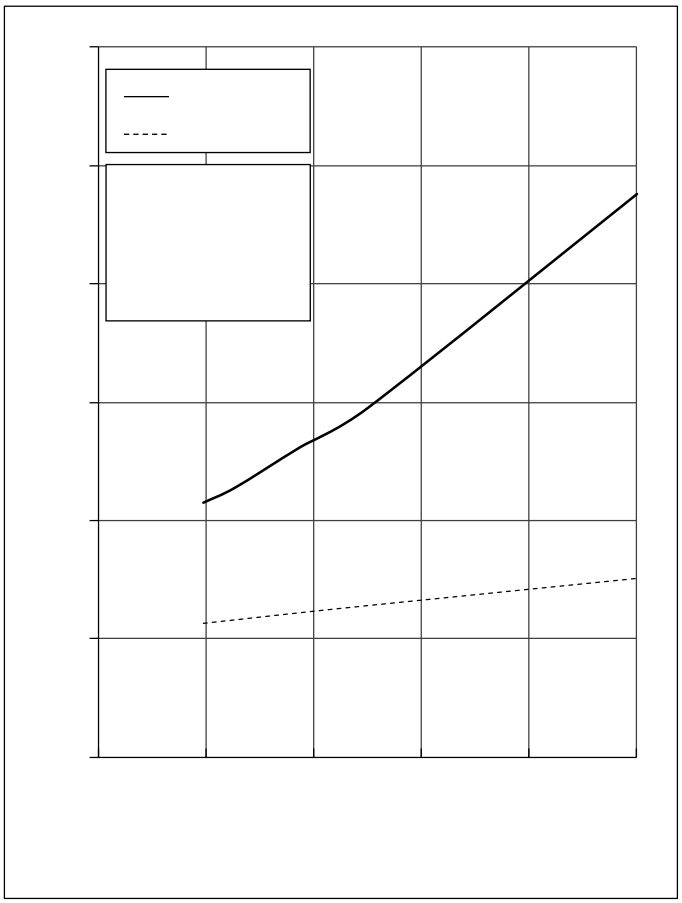
Isolation voltage	V_{isol}	t=1min,f=50Hz	2500			V
Maximum Junction Temperature	T_{jmax}				175	
Operating Junction Temperature	$T_{vj\ op}$		-40		150	
Storage Temperature	T_{stg}		-40		125	
Stray-inductance-module	L_{SCE}			60		nH
Module lead resistance, terminals-chip	$R_{CC'+EE'}$	T_C=25 , per switch		4.0		mΩ
	$R_{AA'+CC'}$			3.0		
Thermal Resistance Junction-to Case	$R_{\theta JC}$	per IGBT-inverter		1.15		K/W
		per Diode-inverter		1.50		
		per IGBT-brake-copper		1.15		
		per Diode-chopper		2.39		
		per Diode-rectifier		1.13		
Thermal Resistance Case-to Sink	$R_{\theta CS}$	per IGBT-inverter		0.41		K/W
		per Diode-inverter		0.51		
		per IGBT-brake-copper		0.51		
		per Diode-chopper		0.77		
		per Diode-rectifier		1.02		
		per Module		0.02		
Mounting Force Per Clamp	F		3.0		6.0	N
Weight of Module	G			180		g

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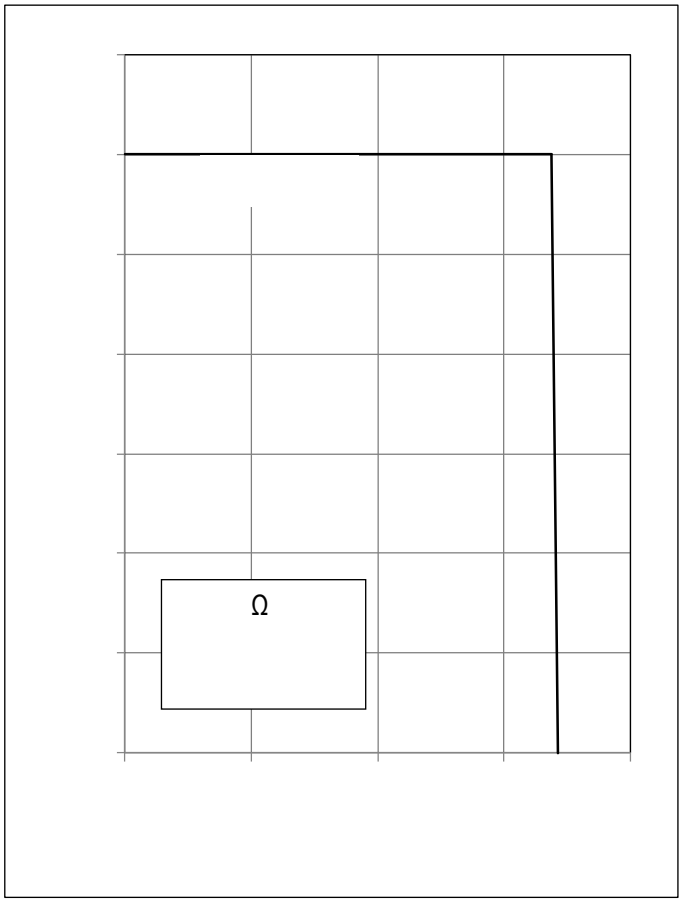


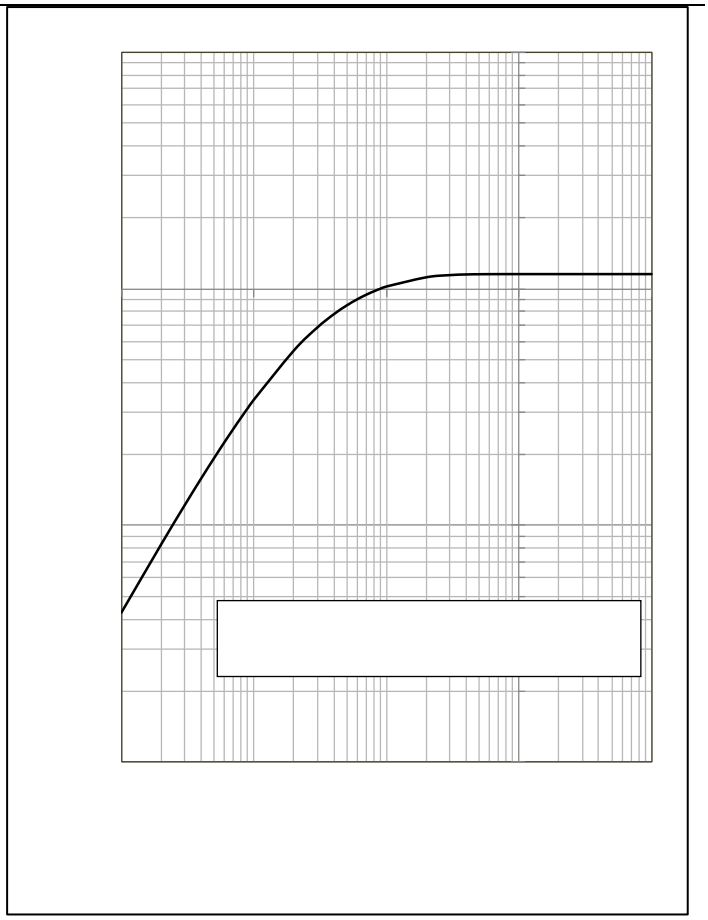


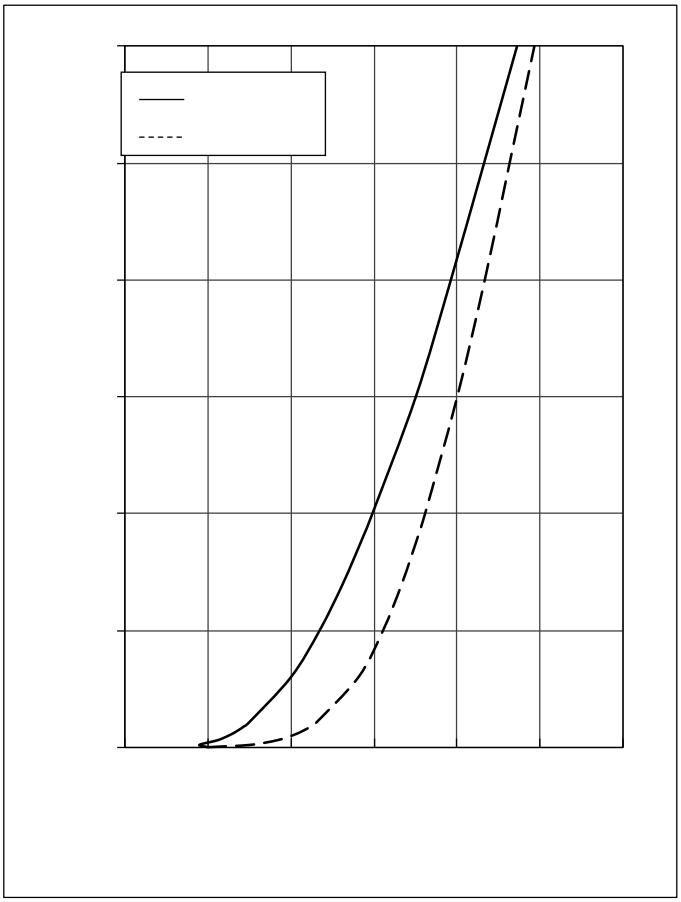


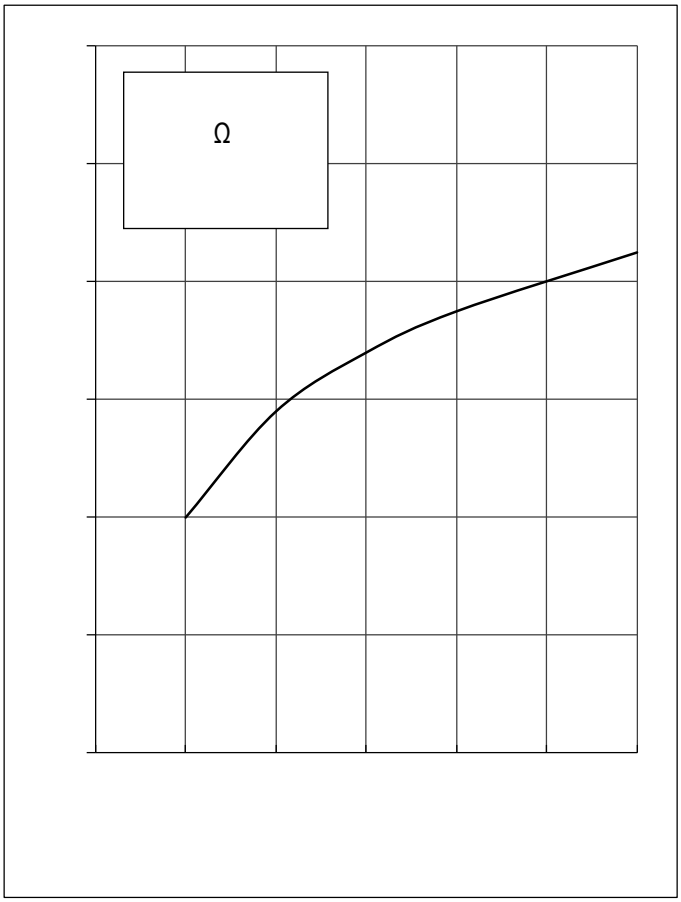


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