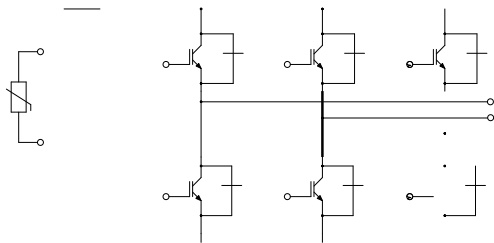




120V
25A

MicroDiodes
AC and DC semiconductor amplifier
UPS (Uninterruptible Power Supplies)



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 (10s)
Maximum junction temperature 175°C

Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_C=1mA, T_J=25$	120	V
Continuous Collector Current	I_C	$T_C=100$ <small>T_{Jmax}</small> 175	25	A
Repetitive Peak Collector Current	I_{CRM}	$t_p=1ms$	50	A
Gate-Emitter Voltage	V_{GES}	$T_J=25$	20	V
Total Power Dissipation	P_{tot}	$T_C=25$ $T_{Jmax}=175$	166	W



Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=12mA, T_j=25$	52	60	68	V
Collector-Emitter Cut-off Current	I_{CS}	$V_{CE}=120V, V_{GE}=0V, T_j=25$			10	nA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=25A, V_{GE}=15V, T_j=25$		185	225	V
		$I_C=25A, V_{GE}=15V, T_j=125$		215		
		$I_C=25A, V_{GE}=15V, T_j=150$		225		
Gate Charge	Q_g			020		μC
Input Capacitance	C_{is}	$V_{CE}=25V, V_{GE}=0V$		145		rF
Reverse Transfer Capacitance	C_{rs}	$f=1MHz, T_j=25$		005		rF
Gate-Emitter leakage current	I_{GS}	$V_{CE}=0V, V_{GE}=20V, T_j=25$			40	nA
Turn-on Delay/line	t_{on}	$I_C=25A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_G=18$ $T_j=25$		158		ns
Rise time	t_r			32		ns
Turn-off Delay/line	t_{off}			331		ns
Fall time	t_f			8		ns
Energy Dissipation During Turn-on/line	E_{on}			180		nJ
Energy Dissipation During Turn-off/line	E_{off}			140		nJ
Turn-on Delay/line	t_{on}	$I_C=25A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_G=18$ $T_j=125$		172		ns
Rise time	t_r			45		ns
Turn-off Delay/line	t_{off}			154		ns
Fall time	t_f			212		ns
Energy Dissipation During Turn-on/line	E_{on}			24		nJ
Energy Dissipation During Turn-off/line	E_{off}			218		nJ
SCData	I_C	$T_p=10s, V_{CE}=15V, T_j=150, V_{CE}=90V, V_{CEM}=120V$		120		A



Repetitive Peak Reverse Voltage	V_{RRM}	$T_j=25$	120	V
Continuous DC Forward Current	I_F		25	A
Repetitive Peak Forward Current	I_{FRM}	$t_f=1ms$	50	A
R_{th(j-c)}	R_{th}	$V_f=0, t_f=10ms, T_j=125$	900	$^{\circ}C/W$
		$V_f=0, t_f=10ms, T_j=150$	750	

Forward Voltage	V_f	$I_f=25A, T_j=25$		210	250
		$I_f=25A, T_j=125$		220	
		$I_f=25A, T_j=150$		220	
Recovered Charge	Q_r	$I_f=25A$		252	μC
Peak Reverse Recovery Current	I_{rr}	$V_r=60V$ $-dv/dt=680A/\mu s$		285	A
Reverse Recovery Energy	E_{rr}	$T_j=25$		091	mJ
Recovered Charge	Q_r	$I_f=25A$		508	μC
Peak Reverse Recovery Current	I_{rr}	$V_r=60V$ $-dv/dt=680A/\mu s$		305	A
Reverse Recovery Energy	E_{rr}	$T_j=125$		175	mJ



Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_C=1mA, T_j=25$	120	V
Continuous Collector Current	I_C	$T_c=100, T_{jmax}=175$	15	A
Repetitive Peak Collector Current	I_{CRM}	$t_p=1ms$	30	A
Gate-Emitter Voltage	V_{GES}	$T_j=25$	20	V
Total Power Dissipation	P_{tot}	$T_c=25, T_{jmax}=175$	155	W

Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=0.5mA, T_j=25$	52	60	68	V	
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=120V, V_{GE}=0V, T_j=25$			10	nA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=15A, V_{GE}=15V, T_j=25$		185	225	V	
		$I_C=15A, V_{GE}=15V, T_j=125$		215			
		$I_C=15A, V_{GE}=15V, T_j=175$		225			
Gate Charge	Q_G			009		nC	
Input Capacitance	C_{in}	$V_{CE}=25V, V_{GE}=0V,$ $f=1MHz, T_j=25$		135		nF	
Reverse Transfer Capacitance	C_{tr}			008		nF	
Gate-Emitter Leakage Current	I_{GES}	$V_{CE}=0V, V_{GE}=20V, T_j=25$			40	nA	
Turn-on Delay/line	t_{on}	$I_C=15A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_G=3\Omega$ $T_j=25$		46		ns	
Rise Time	t_r			45		ns	
Turn-off Delay/line	t_{off}				182		ns
Fall Time	t_f				168		ns
Energy Dissipation During Turn-on/line	E_{on}				092		nJ
Energy Dissipation During Turn-off/line	E_{off}				056		nJ



TurnonDelay/line	t_{on}	$I_c=15A$ $V_{CE}=60V$ $V_{CE}=\pm 15V$ $R_f=3\Omega$ $T_j=125$	46		ns
RiseTime	t_r		68		ns
TurnoffDelay/line	t_{off}		28		ns
FallTime	t_f		20		ns
Energy Dissipation During Turnon/line	E_{on}		137		nJ
Energy Dissipation During Turnoff/line	E_{off}		081		nJ
SCData	I_c		$T_p=10ns, V_{CE}=15V, T_j=150$, $V_{CE}=90V, V_{CEM}=120V$	55	

RepetitivePeakReverseVoltage	V_{RRM}	$T_j=25$	120		V
ContinuousDCForwardCurrent	I_F		15		A
RepetitivePeakForwardCurrent	I_{FRM}	$t_p=1ns$	30		A
Rvalue	R_θ	$V_{CE}=0, t_p=10ns, T_j=125$	400		As
		$V_{CE}=0, t_p=10ns, T_j=150$	310		

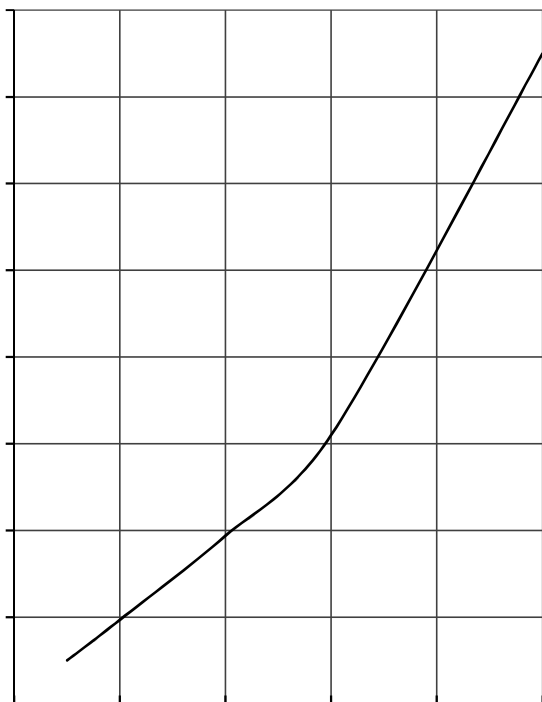
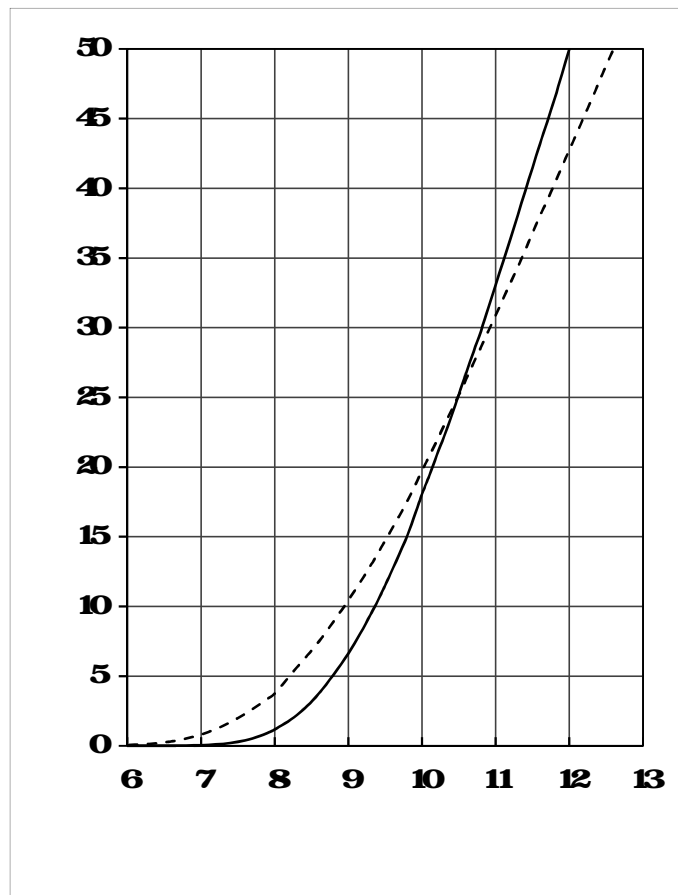
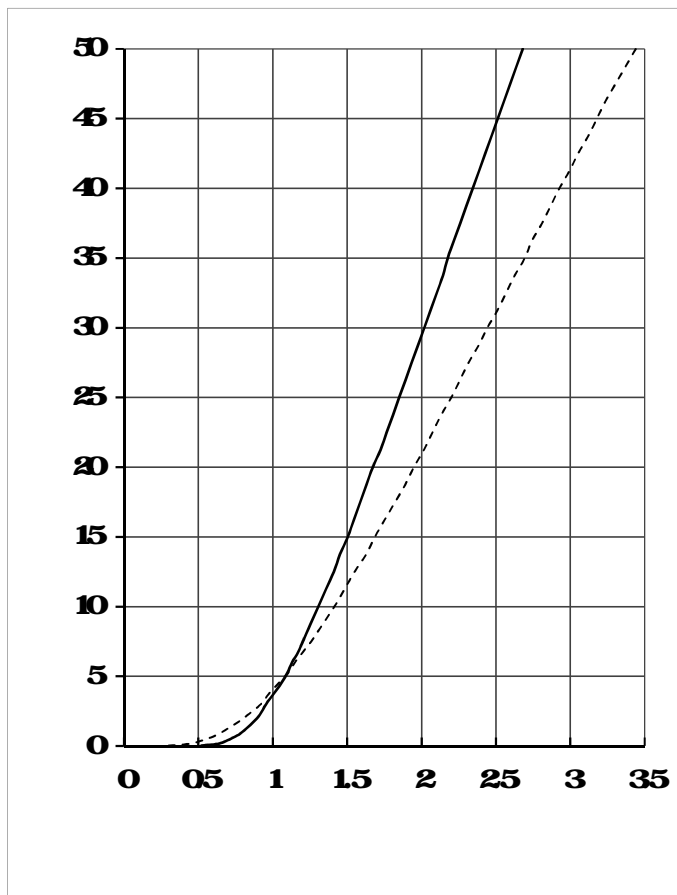
ForwardVoltage	V_F	$I_F=15A, T_j=25$ $I_F=15A, T_j=125$ $I_F=15A, T_j=150$	200	265	V	
RecoveredCharge	Q_r	$I_F=15A$	120			uC
PeakReverseRecoveryCurrent	I_R	$V_{CE}=60V$ $-d_f/d=60A/\mu s$	130			A
ReverseRecoveryEnergy	E_{rec}	$T_j=25$	037		nJ	
RecoveredCharge	Q_r	$I_F=15A$	205		uC	
PeakReverseRecoveryCurrent	I_R	$V_{CE}=60V$ $-d_f/d=60A/\mu s$	120		A	
ReverseRecoveryEnergy	E_{rec}	$T_j=125$	068		nJ	

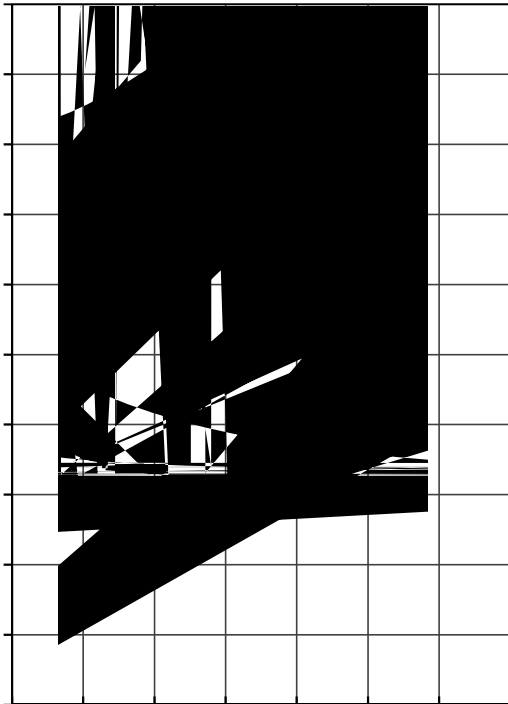
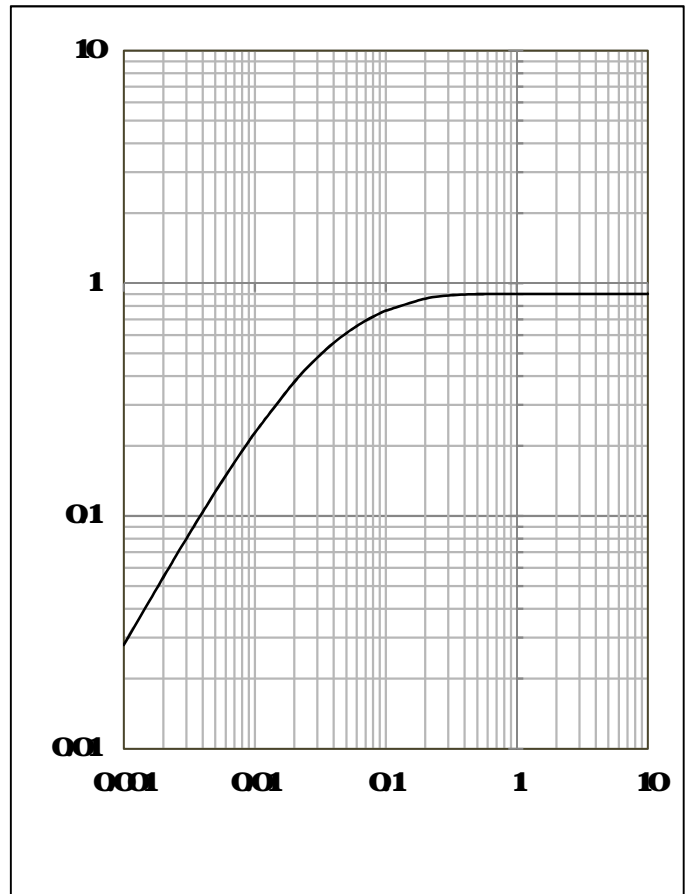
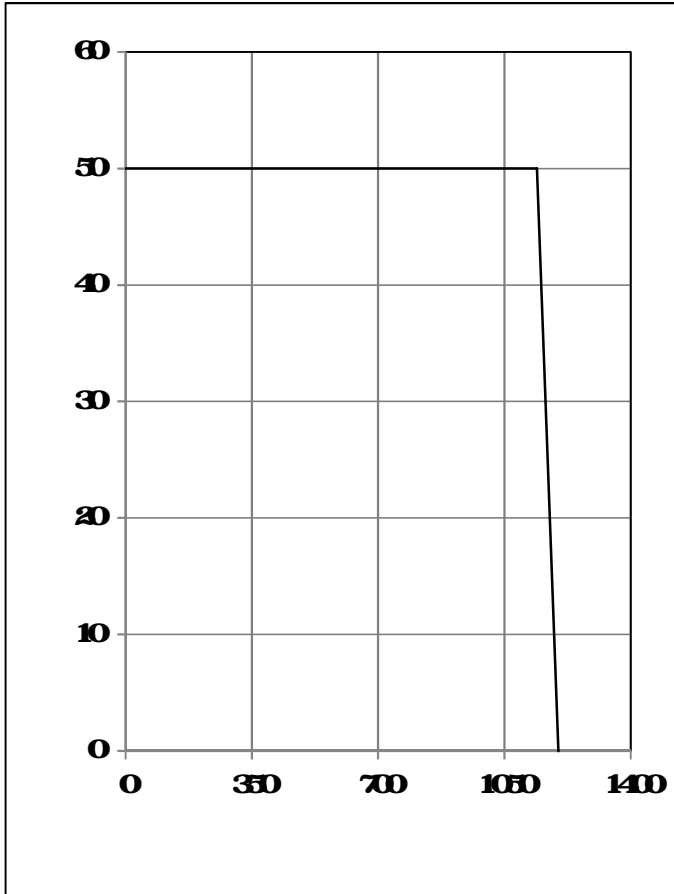


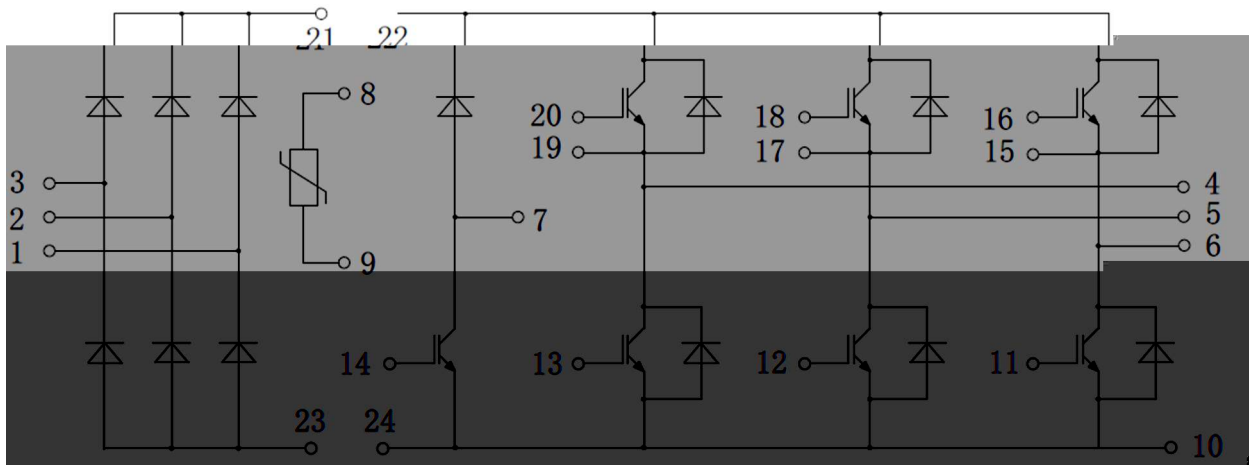
Repetitive Peak Reverse Voltage	V_{RRM}	$T_f=25$	160	V
Average Output Current 50kHz, sine wave	$I_{(A)}$	$T_c=100$	35	A
Minimum RMS Current at Rectifier Output	I_{RSM}	$T_c=100$	6	A
Surge Forward Current	I_{SM}	$V_f=0_p$		



Isolation Voltage	V_{sd}	t=1min@50Hz	250			V
Minimum Junction Temperature	T_{jmin}				175	
Operating Junction Temperature	T_{jq}		-40		150	
Storage Temperature	T_{stg}		-40		125	
Storage Inductance	L_{sc}			60		
Module lead resistance, terminals dip	R_{CHFE}	T_c=25 °C, per switch		40		
	R_{MLCC}			30		
Thermal Resistance Junction to Case	R_{JC}	per GBF in meter			090	KW
		per Dole in meter			120	
		per GBF bare copper			120	
		per Dole copper			150	
		per Dole solder			115	
Thermal Resistance Case to Sink	R_{CS}	per GBF in meter		033		KW
		per Dole in meter		046		
		per GBF bare copper		046		
		per Dole copper		070		
		per Dole solder		049		
		per Middle		002		
Mating Force Per Clamp	F		30		60	N
Weight of Module	G			180		g







Dimensions in Millimeters

