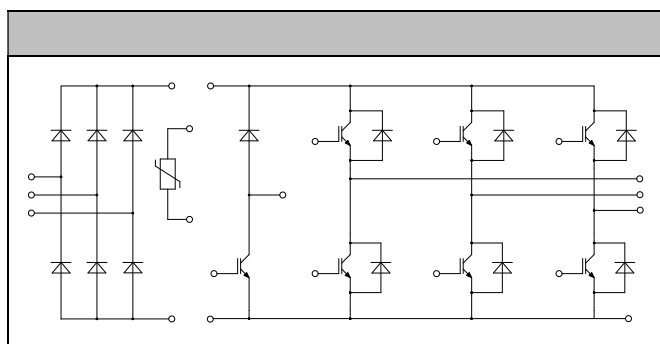




120V
100A

MicroDives
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}	$V_{CE}=0V, I_C=10A, T_J=25$	120	V
Continuous Collector Current	I_C	$T_C=80$ $T_{Jmax}=175$	100	A
Repetitive Peak Collector Current	I_{CRM}	$t_p=1ms$	200	A
Gate-Emitter Voltage	V_{GES}	$T_J=25$	20	V
Total Power Dissipation	P_{tot}	$T_C=25$ $T_{Jmax}=175$	555	W

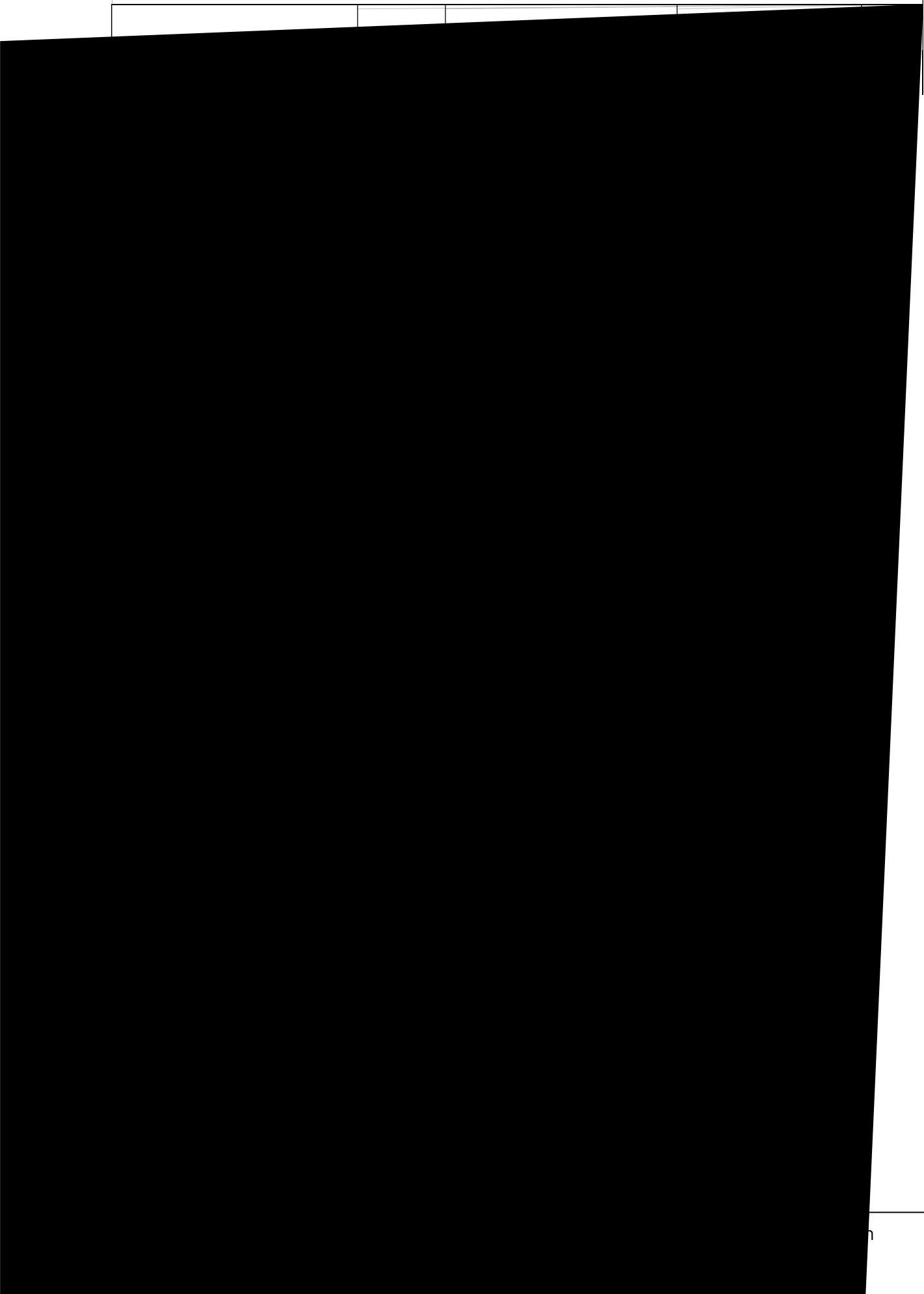


Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=33mA, T_j=25$	50	58	65	V	
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=120V, V_{GE}=0V, T_j=25C$			10	nA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10A, V_{CE}=15V, T_j=25$		185	225	V	
		$I_C=10A, V_{CE}=15V, T_j=125$		215			
		$I_C=10A, V_{CE}=15V, T_j=150$		225			
Gate Charge	Q_g			078		uC	
Input Capacitance	C_{is}	$V_{CE}=25V, V_{GE}=0V$		68		rF	
Reverse Transfer Capacitance	C_{es}	$f=1MHz, T_j=25C$		032		rF	
Gate-Emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=20V, T_j=25$			40	nA	
Turn-on Delay/line	t_{on}	$I_C=10A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $I_s=35A$ Inductive Load		160		ns	
Rise time	t_r		45		ns		
Turn-off Delay/line	t_{off}		215		ns		
Fall time	t_f		54		ns		
Energy Dissipation During Turn-on line	E_{on}		92		nJ		
Energy Dissipation During Turn-off line	E_{off}		58		nJ		
Turn-on Delay/line	t_{on}		$I_C=10A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $I_s=35A$ Inductive Load		180		ns
Rise time	t_r			52		ns	
Turn-off Delay/line	t_{off}			330		ns	
Fall time	t_f			63		ns	
Energy Dissipation During Turn-on line	E_{on}	132			nJ		
Energy Dissipation During Turn-off line	E_{off}	94			nJ		
SCData	I_C	$T_p=10s, V_{CE}=15V, T_j=150, V_{CE}=30V, V_{CEM}=120V$			500		A



Repetitive Peak Reverse Voltage	V_{RRM}	T_j=25	120	V
Continuous DC Forward Current	I_F		100	A
Repetitive Peak Forward Current	I_{FRM}	t_F=1ms	200	A
R_{th(j-c)}	R_{th}	V_F=0, t_F=10ms, T_j=125	150	As
		V_F=0, t_F=10ms, T_j=150	150	

Forward Voltage	V_F	I_F=10A, T_j=25	180	240	V
		I_F=10A, T_j=125	185		
		I_F=10A, T_j=150	185		
Recovered Charge	Q_r	I_F=100A	88		uC
Peak Reverse Recovery Current	I_r	V_R=60V -d_F/d_t=350A/us	105		A
Reverse Recovery Energy	E_{rec}	T_j=25	32		nJ
Recovered Charge	Q_r	I_F=100A	162		uC
Peak Reverse Recovery Current	I_r	V_R=60V -d_F/d_t=350A/us	115		A
Reverse Recovery Energy	E_{rec}	T_j=125	54		nJ





TurnonDelay/line	t_{on}	$I_c=50A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_G=15$ $T_j=125$	175	ns
Rise/line	t_r		42	ns
TurnoffDelay/line	t_{off}		46	ns
Fall/line	t_f		148	ns
Energy Dissipation During Turnon/line	E_{on}		726	nJ
Energy Dissipation During Turnoff/line	E_{off}		580	nJ
SCData	I_c	$T_p=10\mu s, V_{CE}=15V, T_j=150$, $V_{CE}=90V, V_{CEM}=120V$	280	A

RepetitivePeakReverseVoltage	V_{RRM}	$T_j=25$	120	V
ContinuousDCForwardCurrent	I_F		35	A
RepetitivePeakForwardCurrent	I_{FRM}	$t_p=1ms$	70	A
Rvalue	R_{θ}	$V_{CE}=0, t_p=10ns, T_j=125$	20	As
		$V_{CE}=0, t_p=10ns, T_j=150$	20	

ForwardVoltage	V_F	$I_F=35A, T_j=25$ $I_F=35A, T_j=125$ $I_F=35A, T_j=150$	195 195 190	V
RecoveredCharge	Q_r	$I_F=35A$ $V_{CE}=60V$ $-d_f/d=160\mu s$ $T_j=25$	415 42 130	uC A nJ
PeakReverseRecoveryCurrent	I_{rr}	$I_F=35A$ $V_{CE}=60V$ $-d_f/d=160\mu s$ $T_j=125$	800	uC
ReverseRecoveryEnergy	E_{rec}		46	A
ReverseRecoveryEnergy	E_{rec}		238	nJ



Repetitive Peak Reverse Voltage	V_{RRM}	$T_J=25$	160	V
Average Output Current 50kHz, sine wave	$I_{(AV)}$	$T_C=100$	80	A
Minimum RMS Current at Rectifier Output	I_{RSM}	$T_C=100$	120	A
Surge Forward Current	I_{SM}	$V_F=0, t_F=10ms, T_J=25$	1100	A
ft value	f_t	$V_F=0, t_F=10ms, T_J=25$	600	ns

Diode Forward Voltage	V_F	$I_F=50A, T_J=125$		0.98	V
Reverse Current	I_R	$T_J=125, V_R=160V$		20	mA

Rated Resistance	R_{θ}			50	k
Deviation of R100	RR	$T_C=100, R_{100}=483$	-5	5	%
Power Dissipation	P_{θ}			200	mW
B value	B_{350}	$R_{\theta} = R_{\theta} \exp(B_{350} (1/T_2 - 1/298.15))$		335	K



Isolation Voltage	V_{sd}	t=1min@50Hz	250			V
Minimum Junction Temperature	T_{junction}				175	
Operating Junction Temperature	T_{jq}		-40		150	
Storage Temperature	T_{stg}		-40		125	
Staying Inductance	I_{SCE}			6		
Module lead resistance, terminals dip	R_{CH/EE}	T_c=25, per switch		40		
	R_{ML/CC}			30		
Thermal Resistance Junction to Case	R_{JC}	per GBF in meter			027	KW
		per Dole in meter			050	
		per GBF bare copper			034	
		per Dole copper			120	
		per Dole redifier			043	
Thermal Resistance Case to Sink	R_{CS}	per GBF in meter		012		KW
		per Dole in meter		022		
		per GBF bare copper		014		
		per Dole copper		056		
		per Dole redifier		019		
		per Module		009		
Mating Force Per Clamp	F		30		60	N
Weight of Module	G			300		g

