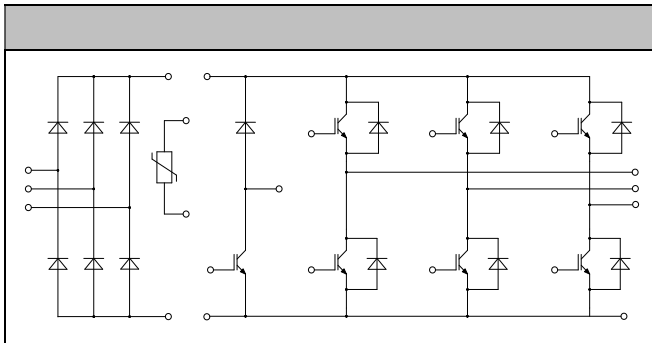




C

120V
15A

MicroDies
AC and DC servo drive 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}	$V_{CE}=0V, I_C=15A, T_J=25$	120	V
Continuous Collector Current	I_C	$T_C=100$ <small>$T_{Jmax}=175$</small>	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}	$T_C=25$ $T_{Jmax}=175$	142	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 Cutoff Current	I_{CS}	$V_{CE}=120V, V_{GE}=0V, T_j=25$			10	mA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=15A, V_{GE}=15V, T_j=25$		185	220	V	
		$I_C=15A, V_{GE}=15V, T_j=125$		215			
		$I_C=15A, V_{GE}=15V, T_j=150$		225			
Gate Charge	Q_g			015		μC	
Input Capacitance	C_{is}	$V_{CE}=25V, V_{GE}=0V$		11		pF	
Reverse Transfer Capacitance	C_{rs}	$f=1MHz, T_j=25$		004		pF	
Gate-Emitter leakage current	I_{GS}	$V_{GE}=0V, V_{CE}=20V, T_j=25$			40	mA	
Turnon Delay/line	t_{on}	$I_C=15A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_{\theta}=3\theta$ $T_j=25$		90		ns	
Rise time	t_r			61		ns	
Turnoff Delay/line	t_{off}			180		ns	
Fall time	t_f			135		ns	
Energy Dissipation During Turnon/line	E_{on}			142		nJ	
Energy Dissipation During Turnoff/line	E_{off}			078		nJ	
Turnon Delay/line	t_{on}		$I_C=15A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_{\theta}=3\theta$ $T_j=125$		95		ns
Rise time	t_r				70		ns
Turnoff Delay/line	t_{off}				260		ns
Fall time	t_f				180		ns
Energy Dissipation During Turnon/line	E_{on}			185		nJ	
Energy Dissipation During Turnoff/line	E_{off}			113		nJ	
SCData	I_C	$T_p=10s, V_{GE}=15V, T_j=150, V_{CE}=90V, V_{CEM}=120V$		90		A	

Repetitive Peak Reverse Voltage	V_{RRM}	$T_j=25$	120	V
Continuous DC Forward Current	I_F		15	A
Repetitive Peak Forward Current	I_{FRM}	$t_F=1ms$	30	A
R_{th(j-c)} value	R_{th}	$V_F=0, t_F=10ms, T_j=125$	160	As
		$V_F=0, t_F=10ms, T_j=150$	140	

Forward Voltage	V_F	$I_F=15A, T_j=25$	200	265	V
		$I_F=15A, T_j=125$	210		
		$I_F=15A, T_j=150$	210		
Recovered Charge	Q_r	$I_F=15A$	120		μC
Peak Reverse Recovery Current	I_{rr}	$V_F=60V$ $-d_F/dt=60A/\mu s$	130		A
Reverse Recovery Energy	E_{rrc}	$T_j=25$	037		mJ
Recovered Charge	Q_r	$I_F=15A$	205		μC
Peak Reverse Recovery Current	I_{rr}	$V_F=60V$ $-d_F/dt=60A/\mu s$	120		A
Reverse Recovery Energy	E_{rrc}	$T_j=125$	068		mJ

Collector-Emitter Voltage	V_{CES}	$V_{CE}=0V, I_C=1mA, T_j=25$	120	V
Continuous Collector Current	I_C	$T_C=100, \nu_{max}=15$	15	A
Repetitive Peak Collector Current	I_{CM}	$t_p=1ms$	30	A
Gate-Emitter Voltage	V_{GES}	$T_j=25$	20	V
Total Power Dissipation	P_{tot}	$T_C=25, T_{jmax}=175$	15	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		
		$I_C=15A, V_{GE}=15V, T_j=150$		225		
Gate Charge	Q_g			009		μC
Input Capacitance	C_{is}	$V_{CE}=25V, V_{GE}=0V$		135		pF
Reverse Transfer Capacitance	C_{res}	$f=1MHz, T_j=25$		008		pF
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	E_{on}			092		nJ
Energy Dissipation During Turn-off	E_{off}			056		nJ





Isolation voltage	V_{sd}	$t=1min @ 50Hz$	250			V
Minimum Junction Temperature	T_{jmin}				175	
Operating Junction Temperature	T_{jop}		-40		150	
Storage Temperature	T_{stg}		-40		125	
Storage inductance (mH)	L_{sc}			60		
Middle lead resistance terminals dip	R_{c+HE}	$T_c=25$, per switch		40		
	R_{A+CC}			30		
Thermal Resistance Junction to Case	R_{JC}	per GBF in ether			115	KW
		per Dole in ether			150	
		per GBF bare copper			115	
		per Dole copper			239	
		per Dole solder			113	
Thermal Resistance Case to Sink	R_{CS}	per GBF in ether		041		KW
		per Dole in ether		051		
		per GBF bare copper		051		
		per Dole copper		077		

