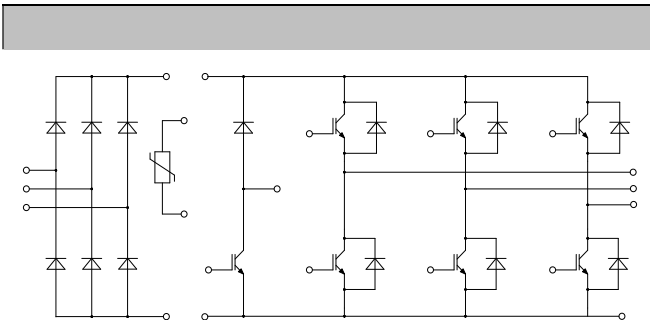




120V
15A

C

MicroDives
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)
Minimum 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	$T_C=100$ $T_{Jmax}=175$	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}	$T_C=25$ $T_{Jmax}=175$	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_{in}	$V_{CE}=25V, V_{GE}=0V$		11		pF		
Reverse Transfer Capacitance	C_{tr}	$f=1MHz, T_j=25$		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} 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		uC
Peak Reverse Recovery Current	I_r	V_F=60V -d_F/d_t=60A/us		130		A
Reverse Recovery Energy	E_{rec}	T_J=25		037		nJ
Recovered Charge	Q_r	I_F=15A		205		uC
Peak Reverse Recovery Current	I_r	V_F=60V -d_F/d_t=60A/us		120		A
Reverse Recovery Energy	E_{rec}	T_J=125		068		nJ



Collector-Emitter Voltage	V_{CES}	$V_{CE}=0V, I_C=1mA, T_j=25$	120	V
Continuous Collector Current	I_C	$T_C=100, v_{jmax} 175$	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		nC
Input Capacitance	C_{in}	$V_{CE}=25V, V_{GE}=0V$		135		nF
Reverse Transfer Capacitance	C_{es}	$f=1MHz, T_j=25$		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	E_{on}			092		nJ
Energy Dissipation During Turn-off	E_{off}			056		nJ



TurnonDelay/line	t_{on}	$I_C=15A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_G=3\Omega$ $T_J=125$		46		ns
Rise/line	t_r		68	ns		
TurnoffDelay/line	t_{off}		28	ns		
Fall/line	t_f		20	ns		
Energy Dissipation During Turnon/line	E_{on}		137	nJ		
Energy Dissipation During Turnoff/line	E_{of}		081	nJ		
SCData	I_C	$T_p=10\mu s, V_{GE}=15V, T_J=150$, $V_{CE}=90V, V_{CEM}=120V$	90	A		

RepetitivePeakReverseVoltage	V_{RM}	$T_J=25$	120	V	
ContinuousDCForwardCurrent	I_F		10	A	
RepetitivePeakForwardCurrent	I_{RM}	$t_p=1ns$	20	A	
Rvalue	R_t	$V_G=0, t_p=10ns, T_J=125$	160	As	
		$V_G=0, t_p=10ns, T_J=150$	140		

ForwardVoltage	V_F	$I_F=10A, T_J=25$	200	250	V
		$I_F=10A, T_J=125$	210		
		$I_F=10A, T_J=150$	210		
RecoveredCharge	Q_r	$I_F=10A$	090	uC	
PeakReverseRecoveryCurrent	I_r	$V_G=60V$ $-d_r/d=50A/\mu s$	125	A	
ReverseRecoveryEnergy	E_{rec}	$T_J=25$	025	nJ	
RecoveredCharge	Q_r	$I_F=10A$	170	uC	
PeakReverseRecoveryCurrent	I_r	$V_G=60V$ $-d_r/d=50A/\mu s$	104	A	
ReverseRecoveryEnergy	E_{rec}	$T_J=125$	050	nJ	



Repetitive Peak Reverse Voltage	V_{RRM}	$T_J=25$	160	V
Average Output Current 50kHz, sine wave	$I_{(AV)}$	$T_C=100$	20	A
Minimum RMS Current at Rectifier Output	I_{RMS}	$T_C=100$	40	A
Surge Forward Current	I_{SM}	$V_F=0, t_p=10ms, T_J=25$	200	A
Reverse Recovery Time	t_r	$V_F=0, t_p=10ms, T_J=25$	300	ns

Diode Forward Voltage	V_F	$I_F=15A, T_J=150$	0.96		V
Reverse Current	I_R	$T_J=150, V_R=160V$		10	mA

Rated Resistance	R_{25}		50		k
Deviation of R100	RR	$T_C=100, R_{100}=483$	-5	5	%
Power Dissipation	P_{25}			200	mW
Temperature Coefficient	$\alpha_{R_{250}}$	$R_{25} - R_{250} \leq P_{250} (1/T_2 - 1/298.15)$		335	K



