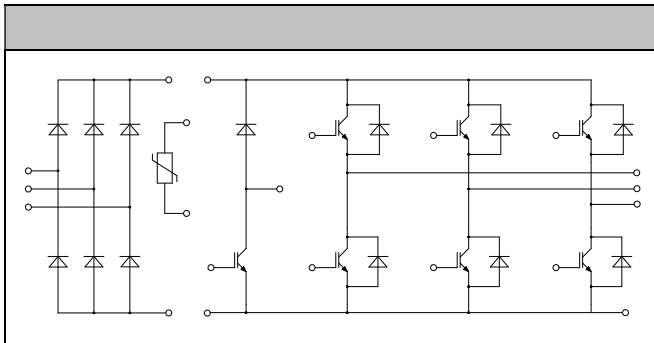




120V
40A

Mitsubishi
AC and DC speed 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}	$V_{CE}=0V, I_C=1mA, T_J=25$	120	V
Continuous Collector Current	I_C	$T_C=100$ <small>v_{jmax}</small> 175	40	A
Repetitive Peak Collector Current	I_{CM}	$t_p=1ms$	80	A
Gate-Emitter Voltage	V_{GES}	$T_J=25$	20	V
Total Power Dissipation	P_{tot}	$T_C=25$ <small>T_{jmax}</small> 175	227	W



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Gate-emitter Threshold Voltage	V_{GE}	$V_{GE}=V_{CE}, I_C=12\text{mA}, T_J=25^\circ\text{C}$	52	60	68	V

Collector-emitter Cut-off Current **I_{CS}** **$V_{CE}=120\text{V}, V_{GE}=0\text{V}, T_J=25^\circ\text{C}$** =1 **mA** =A .2T



Repetitive Peak Reverse Voltage	V_{RM}	T_j=25	120	V
Continuous DC Forward Current	I_F		40	A
Repetitive Peak Forward Current	I_{RM}	t_F=1ms	80	A
Reverse	R_θ	V_F=0, t_F=10ms, T_j=125	20	As
		V_F=0, t_F=10ms, T_j=150	20	

Forward Voltage	V_F	I_F=40A, T_j=25		190	225
		I_F=40A, T_j=125		190	
		I_F=40A, T_j=150		185	
Reversed Charge	Q_R	I_F=40A		415	uC
Peak Reverse Recovery Current	I_R	V_R=60V -d_F/d_t=160A/us		42	A
Reverse Recovery Energy	E_{rec}	T_j=25		130	nJ
Reversed Charge	Q_R	I_F=40A		800	uC
Peak Reverse Recovery Current	I_R	V_R=60V -d_F/d_t=160A/us		46	A
Reverse Recovery Energy	E_{rec}	T_j=125		238	nJ



Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_C=1mA, T_j=25$	120	V
Continuous Collector Current	I_C	$T_c=100, \text{ max } T_j=175$	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_{CES}	$V_{CE}=120V, V_{GE}=0V, T_j=25C$			10	nA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=25A, V_{GE}=15V, T_j=25$		190	230	V
		$I_C=25A, V_{GE}=15V, T_j=125$		220		
		$I_C=25A, V_{GE}=15V, T_j=175$		230		
Gate Charge	Q_g			021		nC
Input Capacitance	C_{iss}	$V_{CE}=25V, V_{GE}=0V, f=1MHz, T_j=25C$		160		nF
Reverse Transfer Capacitance	C_{res}			007		nF
Gate-Emitter Leakage current	I_{GES}	$V_{GE}=0V, V_{CE}=20V, T_j=25$			100	nA
Turn-on Delay/line	$t_{(on)}$	$I_C=25A, V_{CE}=60V, V_{GE}=\pm 15V, R_G=18, T_j=25$		175		ns
Rise time	t_r			38		ns
Turn-off Delay/line	$t_{(off)}$			40		ns
Fall time	t_f			65		ns
Energy Dissipation During Turn-on/line	E_{on}			195		nJ
Energy Dissipation During Turn-off/line	E_{off}			120		nJ



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TurnonDelay/line	t_{on}	$I_C=25A$ $V_{CE}=60V$ $V_{GE}=\pm 15V$ $R_G=18$ $T_J=125$	185		ns
RiseTime	t_r		43		ns
TurnoffDelay/line	t_{off}		510		ns
FallTime	t_f		120		ns
Energy Dissipation During Turnon/line	E_{on}		260		nJ
Energy Dissipation During Turnoff/line	E_{off}		200		nJ
SCData	I_C		$T_p=10\mu s, V_{CE}=15V, T_J=150$, $V_{CE}=90V, V_{CEM}=120V$	135	

RepetitivePeakReverseVoltage	V_{RM}	$T_J=25$	120		V
ContinuousDCForwardCurrent	I_F		15		A
RepetitivePeakForwardCurrent	I_{RM}	$t_p=1ns$	30		A
Rvalue	R_θ	$V_{CE}=0, t_p=10ns, T_J=125$	480		As
		$V_{CE}=0, t_p=10ns, T_J=150$	420		

ForwardVoltage	V_F	$I_F=15A, T_J=25$	200	240	V
		$I_F=15A, T_J=125$	210		
		$I_F=15A, T_J=150$	210		
RecoveredCharge	Q_r	$I_F=15A$	110		uC
PeakReverseRecoveryCurrent	I_r	$V_{CE}=60V$ $-d_f/d=50A/\mu s$	120		A
ReverseRecoveryEnergy	E_{rec}	$T_J=25$	030		nJ
RecoveredCharge	Q_r	$I_F=15A$	190		uC
PeakReverseRecoveryCurrent	I_r	$V_{CE}=60V$ $-d_f/d=50A/\mu s$	140		A
ReverseRecoveryEnergy	E_{rec}	$T_J=125$	060		nJ



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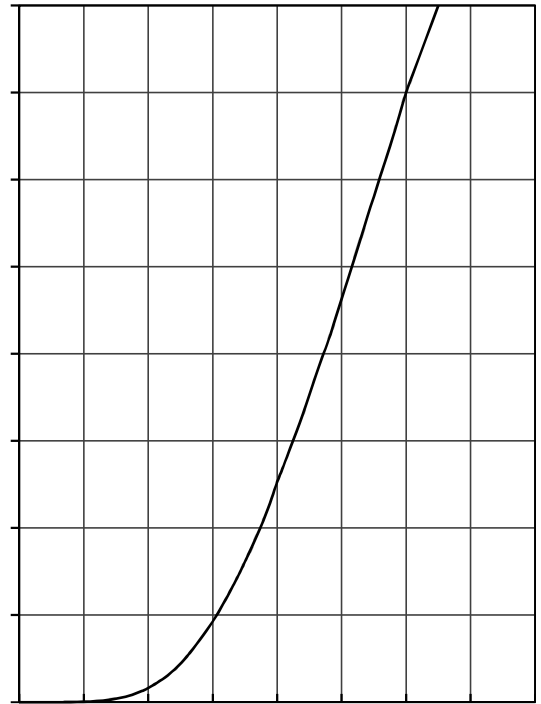
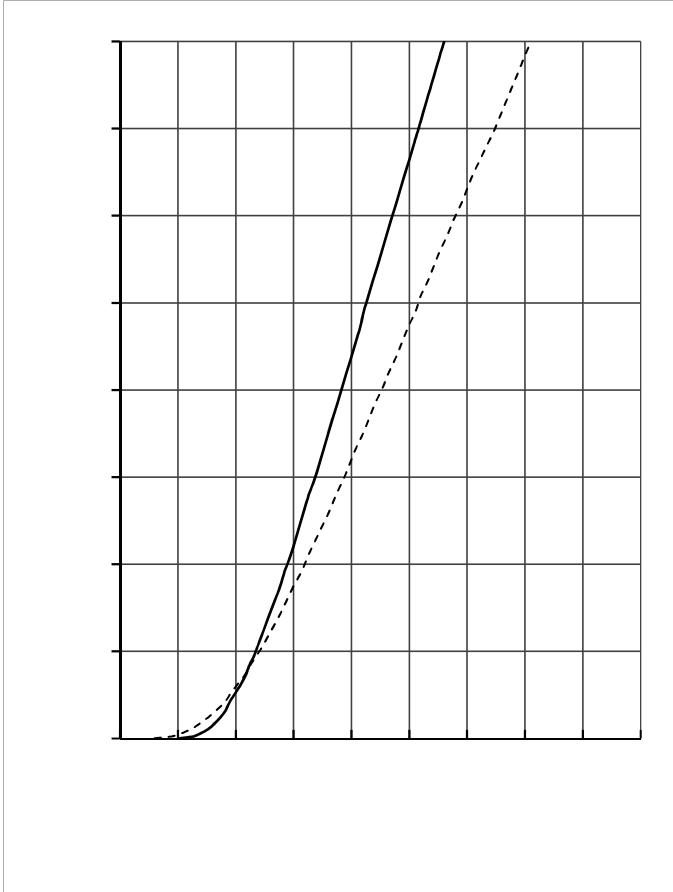


Isd	V_{sd}	t_{min} f=50Hz	250			V
Minimum Junction Temperature	T_{junction}				175	
Quasi Junction Temperature	T_{qj}		-40		150	
Storage Temperature	T_{stg}	w v	= -40		125	

Stay in data range

I_{SC}

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