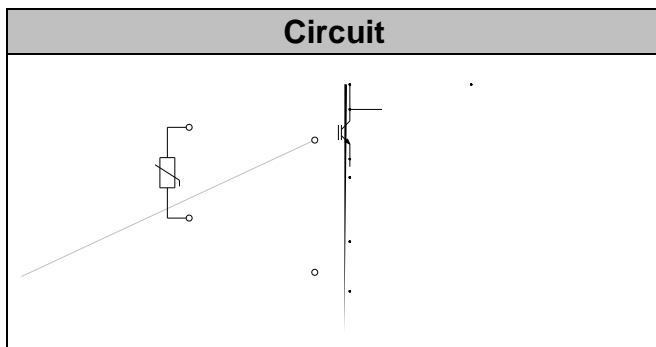




1200V
50A

- Motor Drivers
- 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(10us)
- Maximum junction temperature 175

Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_C=1mA, T_{vj}=25$	1200	V
Continuous Collector Current	I_C	$T_c=100, T_{vjmax}=175$	50	A
Repetitive Peak Collector Current	I_{CRM}	$tp=1ms$	100	A
Gate-Emitter Voltage	V_{GES}	$T_{vj}=25$	± 20	V
Total Power Dissipation	P_{tot}	$T_c=25$ $T_{vjmax}=175$	288	W



Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=1.7mA, T_{vj}=25$	5.2	5.8	6.4	V
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25$			1.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50A, V_{GE}=15V, T_{vj}=25$		1.90	2.30	V
		$I_C=50A, V_{GE}=15V, T_{vj}=125$		2.20		
		$I_C=50A, V_{GE}=15V, T_{vj}=150$		2.30		
Gate Charge	Q_G			0.35		uC
Input Capacitance	C_{ies}	$V_{CE}=25V, V_{GE}=0V,$ $f=1MHz, T_{vj}=25$		2.60		nF
Reverse Transfer Capacitance	C_{res}			0.10		nF
Internal Gate Resistance	R_{gint}			4.0		
Gate-Emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=20V, T_{vj}=25$			400	nA
Turn-on Delay Time	$t_{d(on)}$	$I_C=50A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_G=15\Omega$ $T_{vj}=25$		168		ns
Rise Time	t_r			34		ns
Turn-off Delay Time	$t_{d(off)}$			320		ns
Fall Time	t_f			78		ns
Energy Dissipation During Turn-on Time	E_{on}			5.42		mJ
Energy Dissipation During Turn-off Time	E_{off}			4.15		mJ
Turn-on Delay Time	$t_{d(on)}$	$I_C=50A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_G=15\Omega$ $T_{vj}=125$		175		ns
Rise Time	t_r			42		ns
Turn-off Delay Time	$t_{d(off)}$			426		ns
Fall Time	t_f			148		ns
Energy Dissipation During Turn-on Time	E_{on}			7.26		mJ
Energy Dissipation During Turn-off Time	E_{off}			5.80		mJ
SC Data	I_{sc}	$T_p \leq 10\mu s, V_{GE}=15V, T_{vj}=150$, $V_{cc}=900V, V_{CEM} \leq 1200V$		220		A



Repetitive Peak Reverse Voltage	V_{RRM}	$T_{vj}=25$	1200	V
Continuous DC Forward Current	I_F		50	A
Repetitive Peak Forward Current	I_{FRM}	$t_p=1\text{ms}$	100	A
I^2t -value	I^2t	$V_R=0, t_p=10\text{ms}, T_{vj}=125$	560	A ² s
		$V_R=0, t_p=10\text{ms}, T_{vj}=150$	480	

Forward Voltage	V_F	$I_F=50\text{A}, T_{vj}=25$		1.90	2.40
		$I_F=50\text{A}, T_{vj}=125$		1.90	
		$I_F=50\text{A}, T_{vj}=150$		1.95	
Recovered Charge	Q_{rr}	$I_F=50\text{A}$		5.8	μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=1500\text{A}/\mu\text{s}$		56	A
Reverse Recovery Energy	E_{rec}	$T_{vj}=25$		1.85	mJ
Recovered Charge	Q_{rr}	$I_F=50\text{A}$		9.1	μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=1500\text{A}/\mu\text{s}$		58	A
Reverse Recovery Energy	E_{rec}	$T_{vj}=125$		3.30	mJ



Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_C=1mA, T_{vj}=25$	1200	V
Continuous Collector Current	I_C	$T_c=100, T_{vjmax}=175$	35	A
Repetitive Peak Collector Current	I_{CRM}	$t_p=1ms$	70	A
Gate-Emitter Voltage	V_{GES}	$T_{vj}=25$	± 20	V
Total Power Dissipation	P_{tot}	$T_c=25, T_{vjmax}=175$	227	W

Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=1.4mA, T_{vj}=25$	5.2	5.8	6.4	V	
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25$			1.0	mA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=35A, V_{GE}=15V, T_{vj}=25$		1.85	2.25	V	
		$I_C=35A, V_{GE}=15V, T_{vj}=125$		2.15			
		$I_C=35A, V_{GE}=15V, T_{vj}=150$		2.25			
Gate Charge	Q_G			0.27		uC	
Input Capacitance	C_{ies}	$V_{CE}=25V, V_{GE}=0V, f=1MHz, T_{vj}=25$		2.00		nF	
Reverse Transfer Capacitance	C_{res}			0.07		nF	
Gate-Emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=20V, T_{vj}=25$			400	nA	
Turn-on Delay Time	$t_{d(on)}$	$I_C=35A, V_{CE}=600V, V_{GE}=\pm 15V, R_G=12\Omega, T_{vj}=25$		25		ns	
Rise Time	t_r			13		ns	
Turn-off Delay Time	$t_{d(off)}$			24		ns	
Fall Time	t_f			115		ns	
Energy Dissipation During Turn-on Time	E_{on}				1.90		mJ
Energy Dissipation During Turn-off Time	E_{off}				2.00		mJ



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RoHS
COMPLIANT

Turn-on Delay Time	$t_{d(on)}$	$I_C = 35\text{ A}$ $V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_G = 12\Omega$ $T_{vj} = 125$	25	ns
Rise Time	t_r		16	ns
Turn-off Delay Time	$t_{d(off)}$		295	ns
Fall Time	t_f		170	ns
Energy Dissipation During Turn-on Time	E_{on}		2.90	mJ
Energy Dissipation During Turn-off Time	E_{off}		2.90	mJ
SC Data	I_{sc}		$T_p \leq 10\mu s, V_{GE} = 15\text{ V}, T_{vj} = 150$, $V_{cc} = 900\text{ V}, V_{CEM} \leq 1200\text{ V}$	150

Repetitive Peak Reverse Voltage	V_{RRM}	$T_j = 25$	1200	V
Continuous DC Forward Current	I_F		15	A
Repetitive Peak Forward Current	I_{FRM}	$t_p = 1\text{ ms}$	30	A
I^2t -value	I^2t	$V_R = 0, t_p = 10\text{ ms}, T_j = 125$	16.0	A ² s
		$V_R = 0, t_p = 10\text{ ms}, T_j = 150$	14.0	

Forward Voltage	V_F	$I_F = 15\text{ A}, T_{vj} = 25$	2.00	2.40	V
		$I_F = 15\text{ A}, T_{vj} = 125$	2.10		
		$I_F = 15\text{ A}, T_{vj} = 150$	2.10		
Recovered Charge	Q_{rr}	$I_F = 15\text{ A}$	1.10		uC
Peak Reverse Recovery Current	I_{rr}	$V_R = 600\text{ V}$ $-di_F/dt = 550\text{ A}/\mu s$	12.0		A
Reverse Recovery Energy	E_{rec}	$T_{vj} = 25$	0.30		mJ
Recovered Charge	Q_{rr}	$I_F = 15\text{ A}$	1.90		uC
Peak Reverse Recovery Current	I_{rr}	$V_R = 600\text{ V}$ $-di_F/dt = 550\text{ A}/\mu s$	14.0		A
Reverse Recovery Energy	E_{rec}	$T_{vj} = 125$	0.60		mJ



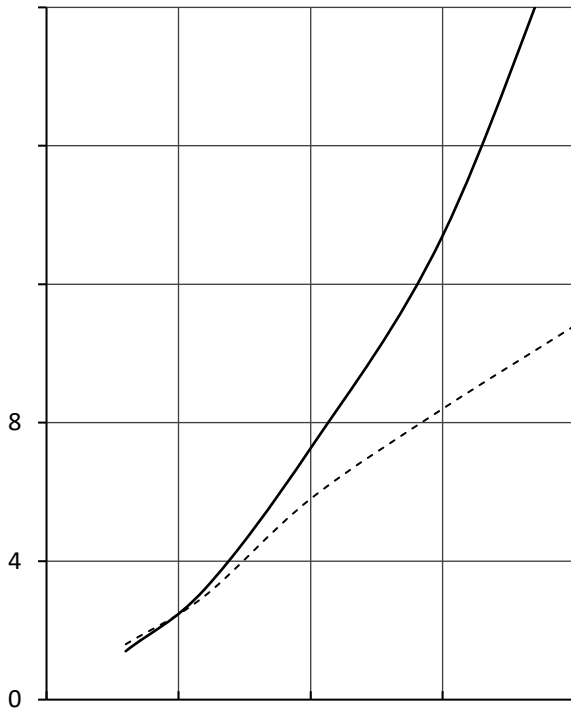
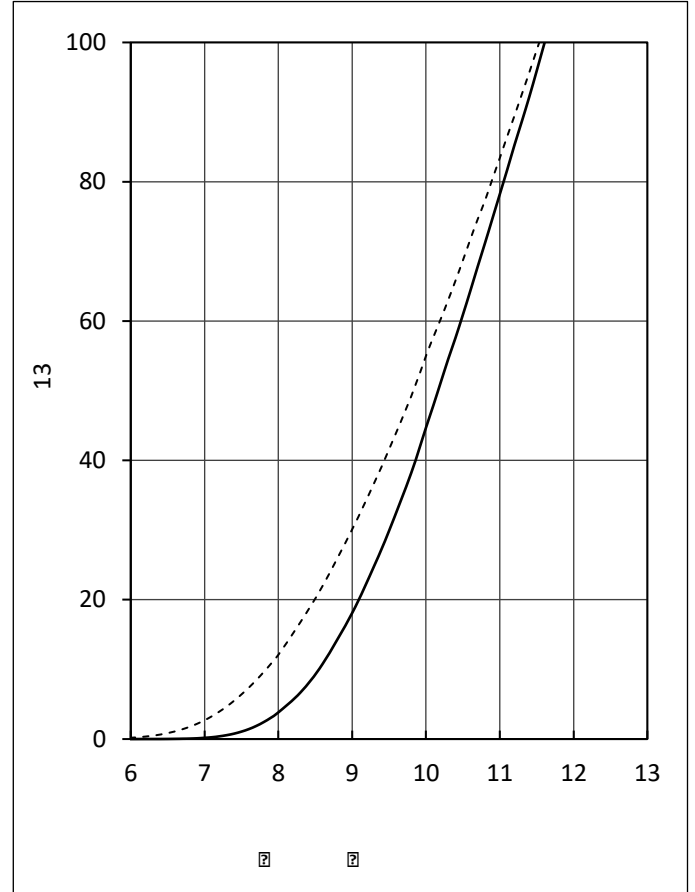
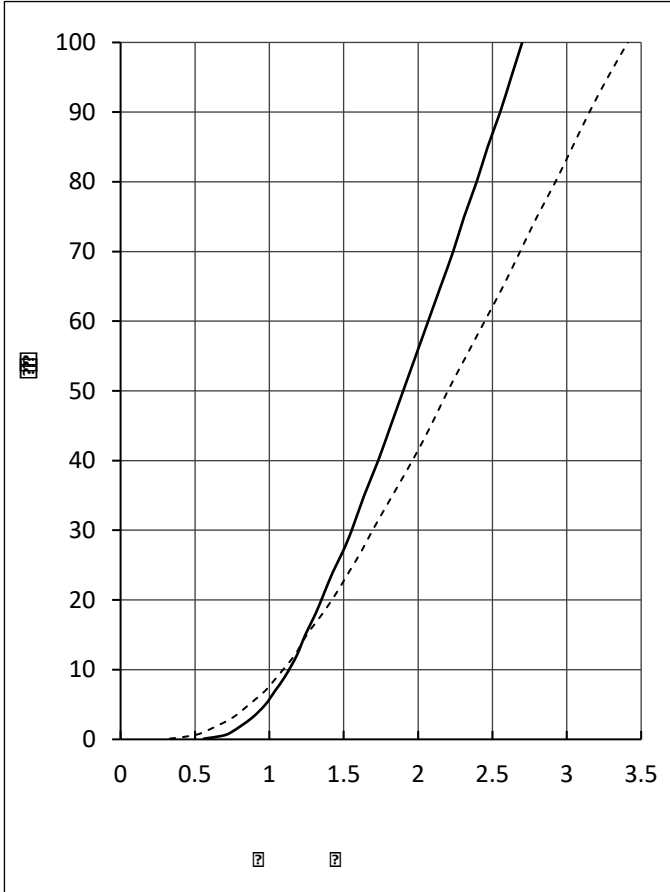
Repetitive Peak Reverse Voltage	V_{RRM}	$T_j=25$	1600	V
Average output Current 50/60Hz, sine wave	$I_{F(AV)}$	$T_c=100$	65	A
Maximum RMS Current at Rectifier Output	I_{RMSM}	$T_c=100$	110	A
Surge Forward Current	I_{FSM}	$V_R=0, t_p=10ms, T_j=45$	850	A
I^2t -value	I^2t	$V_R=0, t_p=10ms, T_j=45$	3610	A^2s

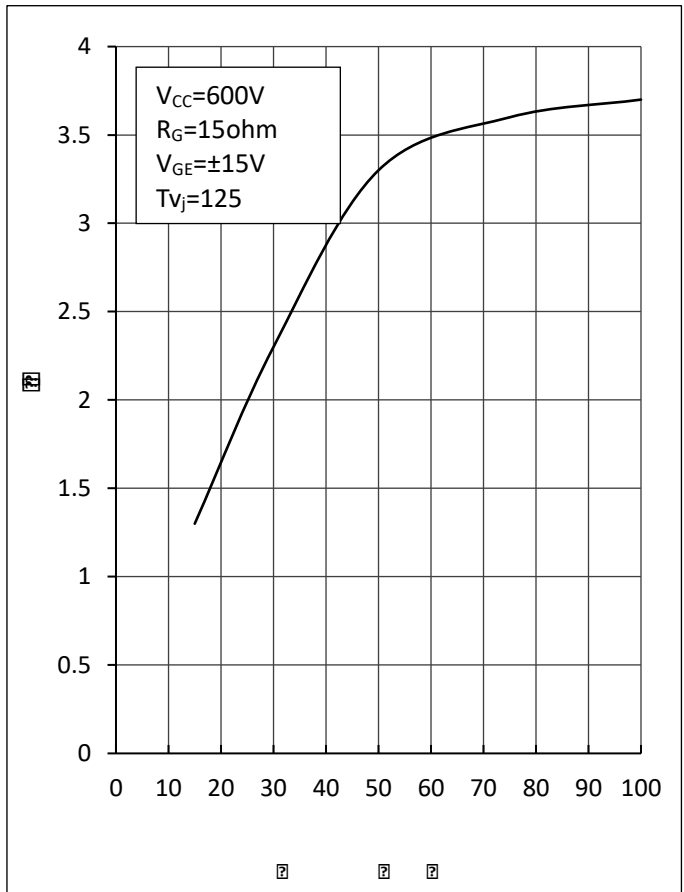
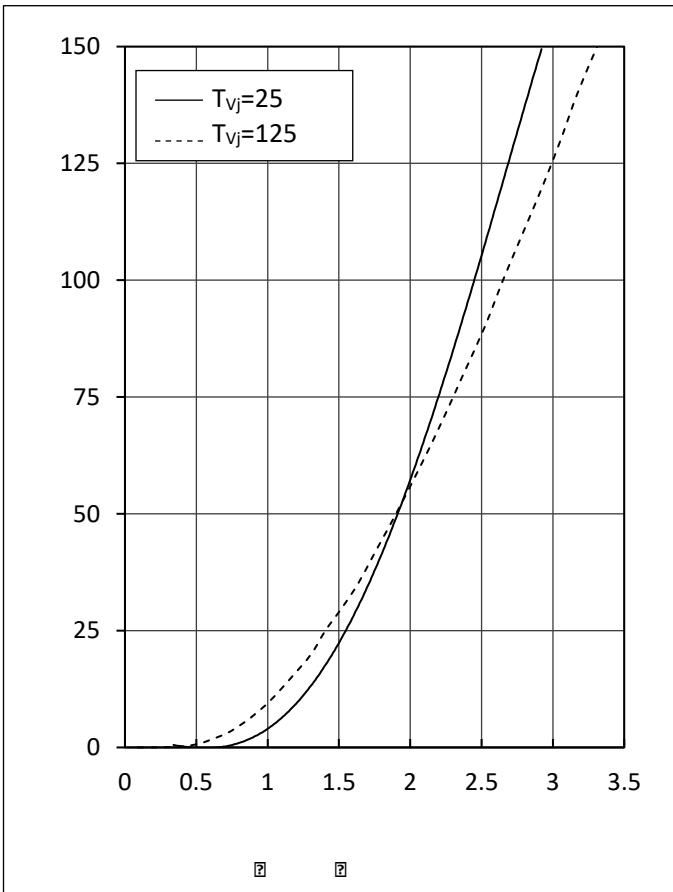
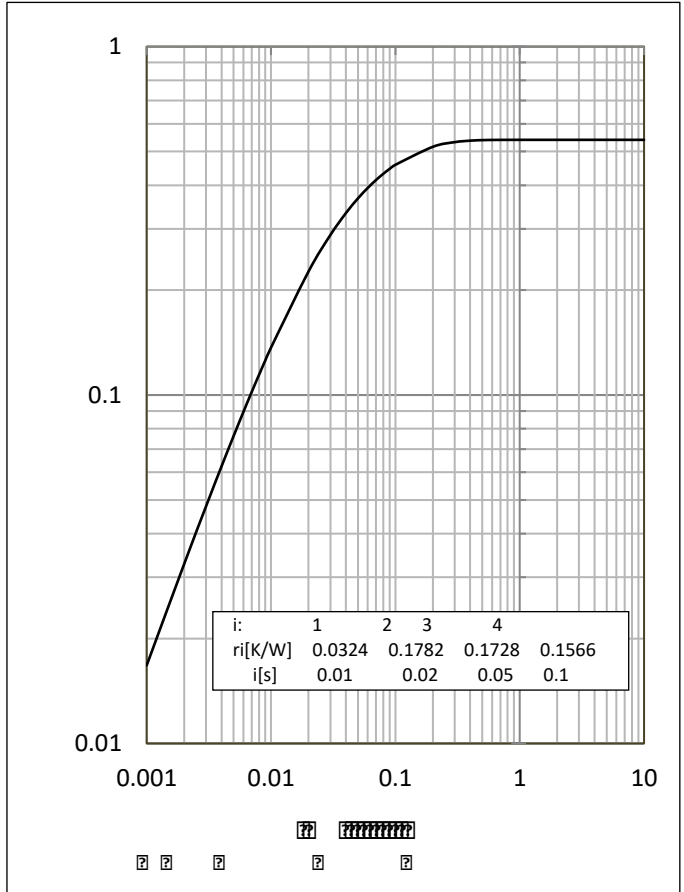
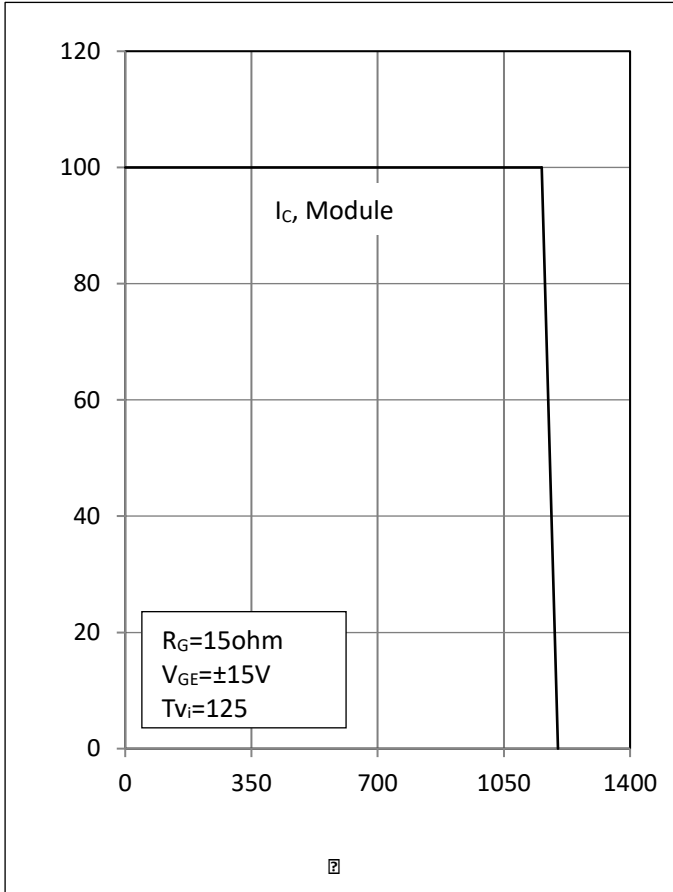
Diode Forward Voltage	V_F	$I_F=50A, T_j=125$	1.0	V
Reverse Current	I_R	$T_j=125, V_R=1600V$	1.5	mA

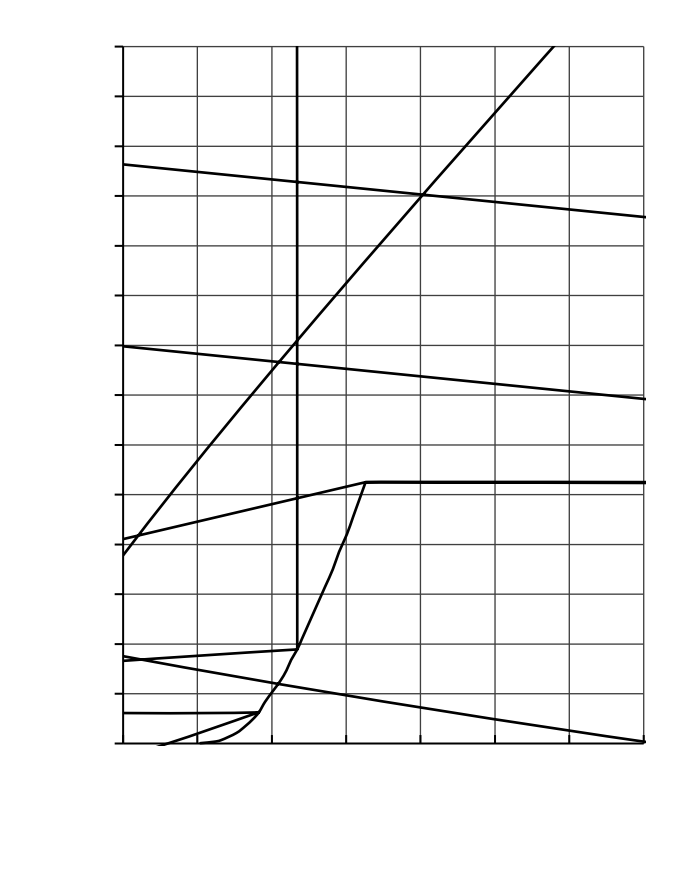
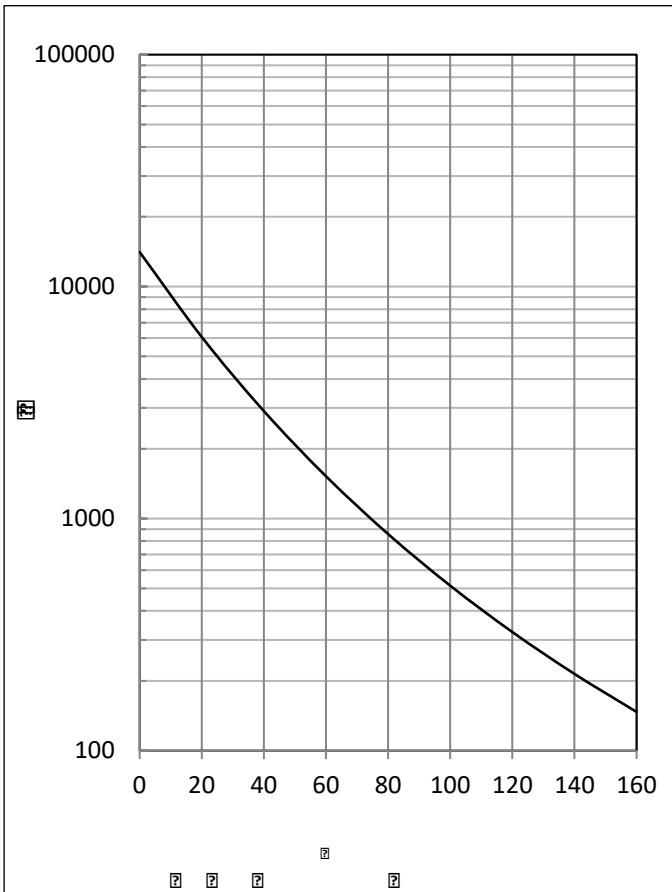
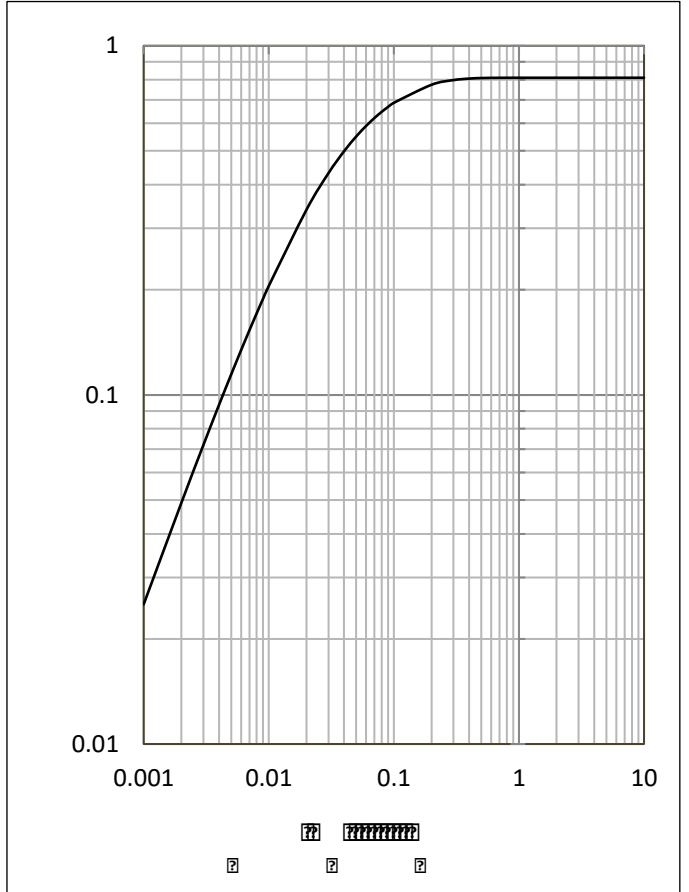
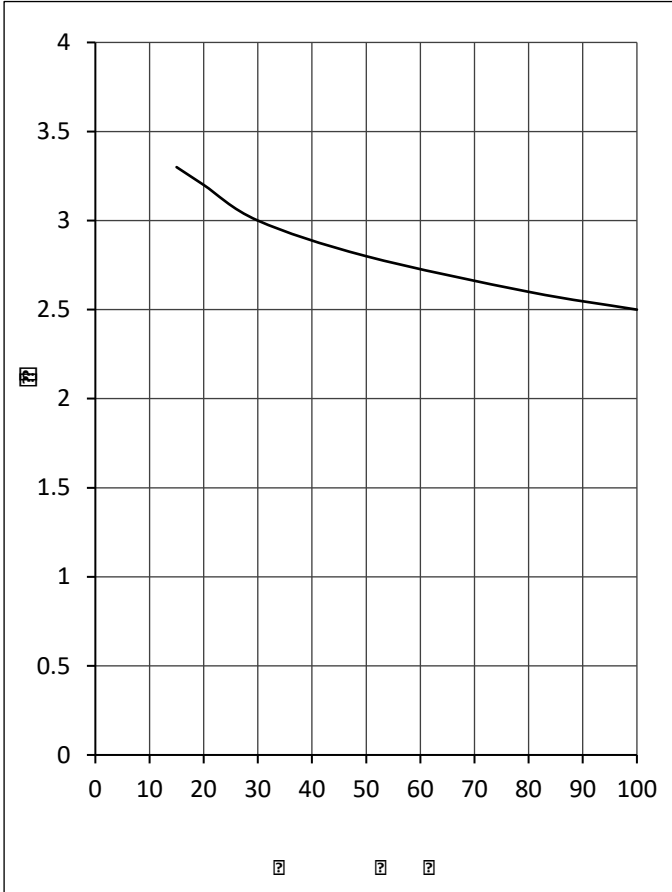
Rated Resistance	R_{25}		5.0	k	
Deviation of R100	$\Delta R/R$	$T_c=100, R_{100}=493.3$	-5	5	%
Power Dissipation	P_{25}			20.0	mW
B-value	$B_{25/50}$	$R_2=R_{25}\exp[B_{25/50}(1/T_2-1/(298.15 K))]$	3375		K

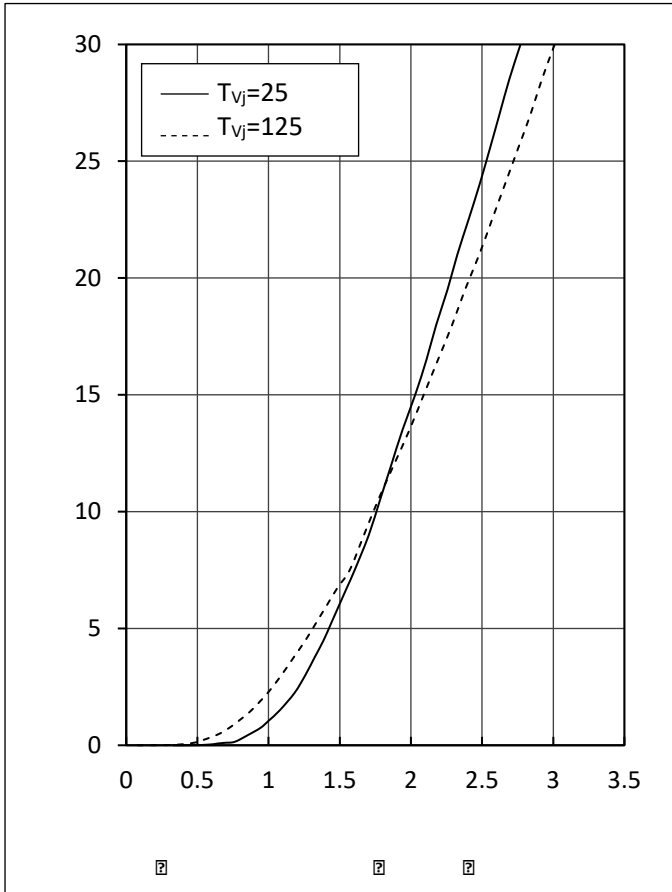


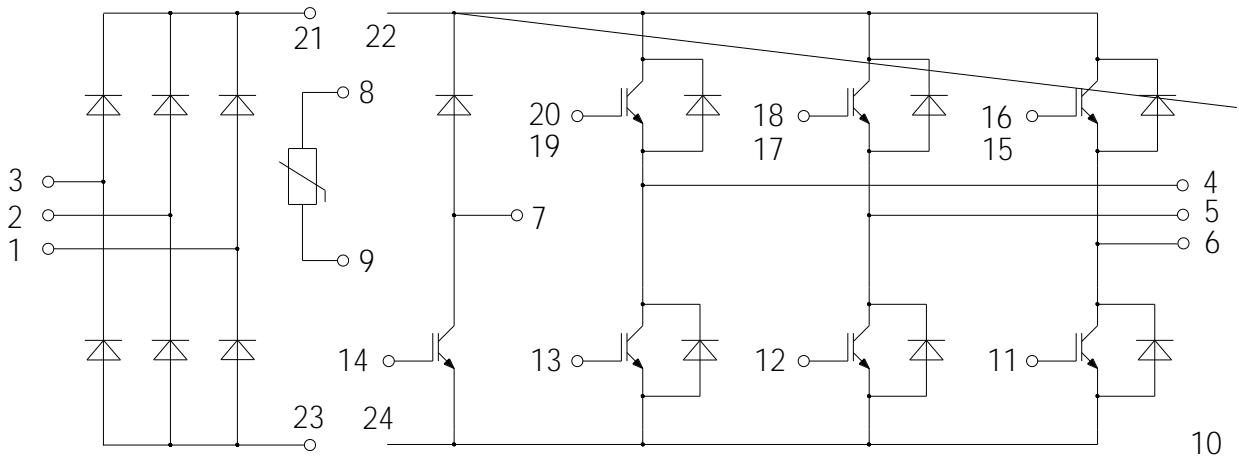
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● Package Outline Information

Dimensions in Millimeters

