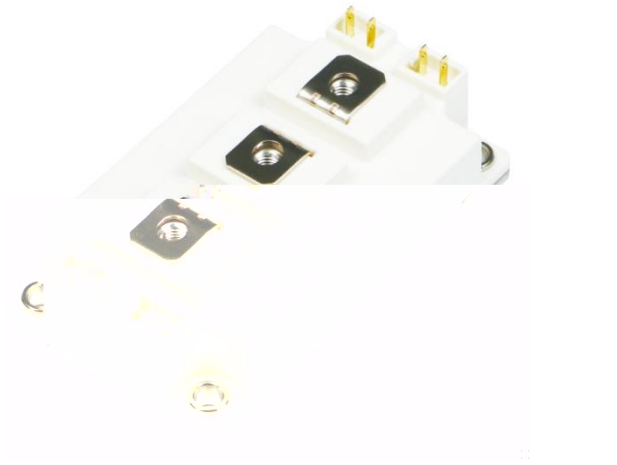




MG150HF12LEC2

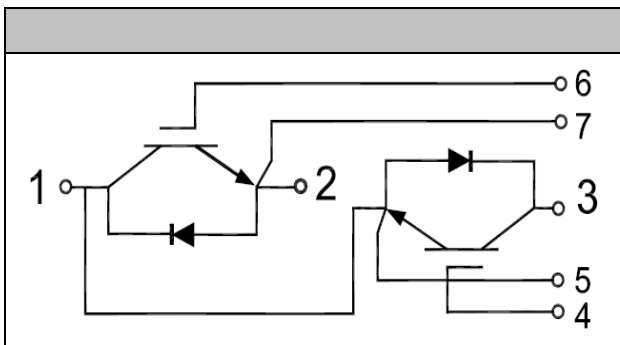


IGBT Modules

V_{CES}	1200V
I_c	150A

Applications

High frequency drivers
Solar inverters
UPS (Uninterruptible Power Supplies)
Electric welding machine



Features

High speed IGBT in NPT technology
Low switching losses
High short circuit capability(10us)
Including ultra fast & soft recovery anti-parallel FWD
Low inductance
Maximum junction temperature 150

● IGBT

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_c = 1mA, T_{vj}=25$	1200	V
Continuous Collector Current	I_c	$T_c=80$	150	A
Repetitive Peak Collector Current	I_{CRM}	$t_p=1ms$	300	A
Gate-Emitter Voltage	V_{GES}	$T_{vj}=25$	20	V
Total Power Dissipation	P_{tot}	$T_c=25$ $T_{vjmax}=150$	1136	W



MG150HF12LEC2

Characteristic values

Parameter	Symbol	Conditions	Value			Unit	
			Min.	Typ.	Max.		
Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=6mA, T_{vj}=25$	5.0	5.8	6.5	V	
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25$			1.0	mA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=150A, V_{GE}=15V, T_{vj}=25$		3.0	3.5	V	
		$I_C=150A, V_{GE}=15V, T_{vj}=125$		3.8			
Gate Charge	Q_G			1.75		uC	
Input Capacitance	C_{ies}	$V_{CE}=25V, V_{GE}=0V,$ $f=1MHz, T_{vj}=25$		9.8		nF	
Reverse Transfer Capacitance	C_{res}			0.6		nF	
Gate-Emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=20V, T_{vj}=25$			400	nA	
Turn-on Delay Time	$t_{d(on)}$	$I_C=150A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_{GON}=5.1$ $R_{GOFF}=2.5$ $T_{vj}=25$		70		ns	
Rise Time	t_r			60		ns	
Turn-off Delay Time	$t_{d(off)}$				230		ns
Fall Time	t_f				32		ns
Energy Dissipation During Turn-on Time	E_{on}				14.4		mJ
Energy Dissipation During Turn-off Time	E_{off}				5.5		mJ
Turn-on Delay Time	$t_{d(on)}$	$I_C=150A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_{GON}=5.1$ $R_{GOFF}=2.5$ $T_{vj}=125$		90		ns	
Rise Time	t_r				70		ns
Turn-off Delay Time	$t_{d(off)}$				280		ns
Fall Time	t_f				35		ns
Energy Dissipation During Turn-on Time	E_{on}				21.6		mJ
Energy Dissipation During Turn-off Time	E_{off}				7.8		mJ
SC Data	I_{sc}	$T_p=10\mu s, V_{GE}=15V, T_{vj}=125$ $V_{CC}=600V, V_{CEM}=1200V$		1100		A	



MG150HF12LEC2

● Diode

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	$T_{vj}=25$	1200	V
Continuous DC Forward Current	I_F		150	A
Repetitive Peak Forward Current	I_{FRM}	$t_p=1\text{ms}$	300	A

Characteristic values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	V_F	$I_F=150\text{A}, T_{vj}=25$		1.90	2.40	V
		$I_F=150\text{A}, T_{vj}=125$		1.95		
Recovered Charge	Q_{rr}	$I_F=150\text{A}$		6.8		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=1400\text{A}/\mu\text{s}$		145		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=25$		4.1		mJ
Recovered Charge	Q_{rr}	$I_F=150\text{A}$		14.5		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=1400\text{A}/\mu\text{s}$		160		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=125$		8.4		mJ



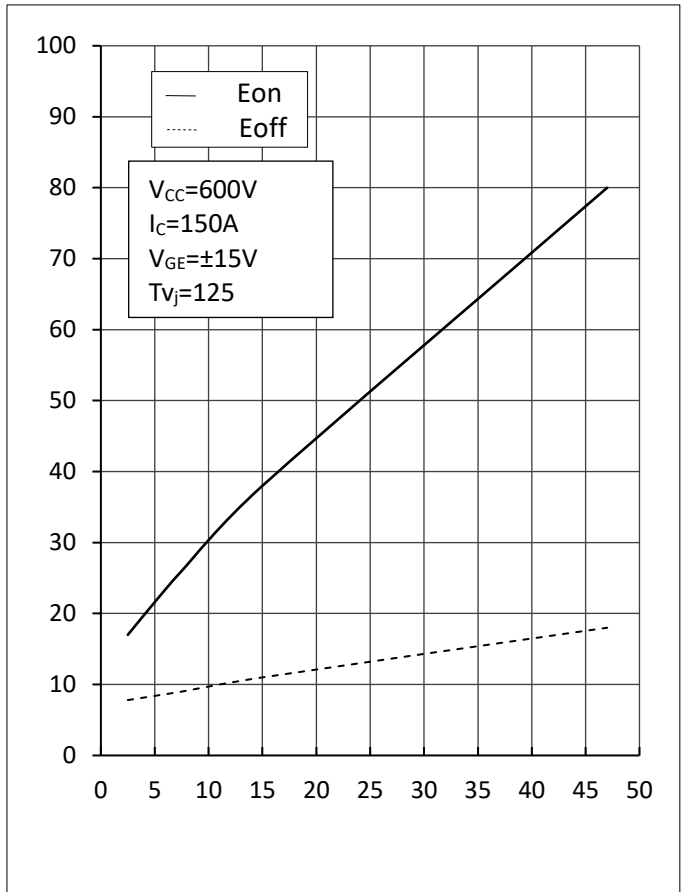
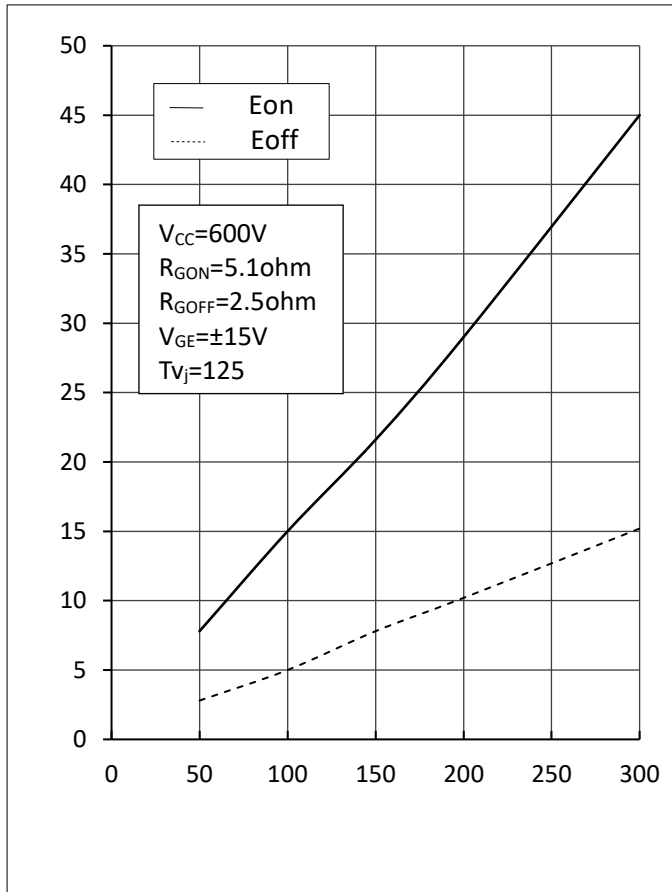
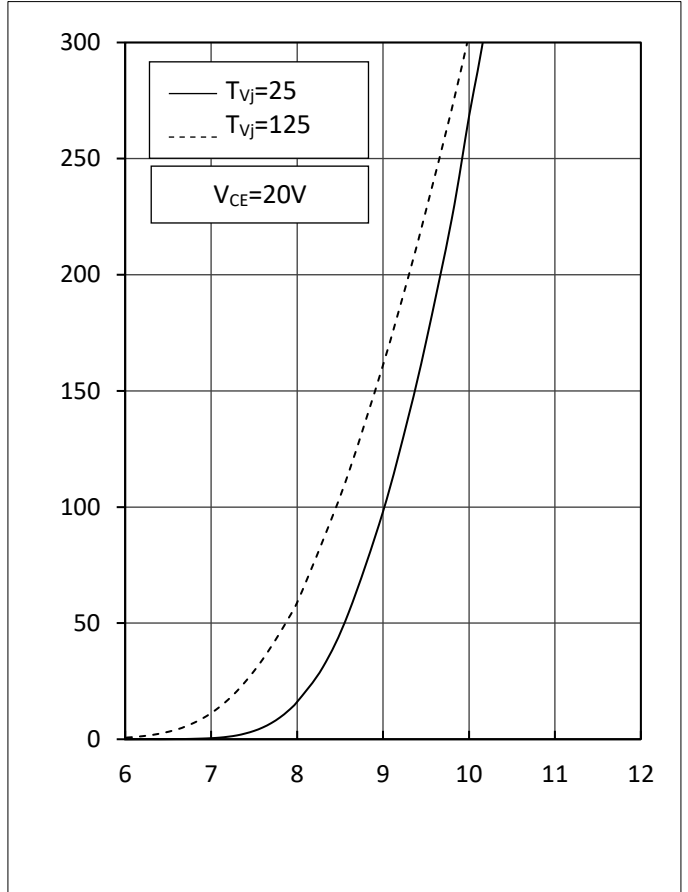
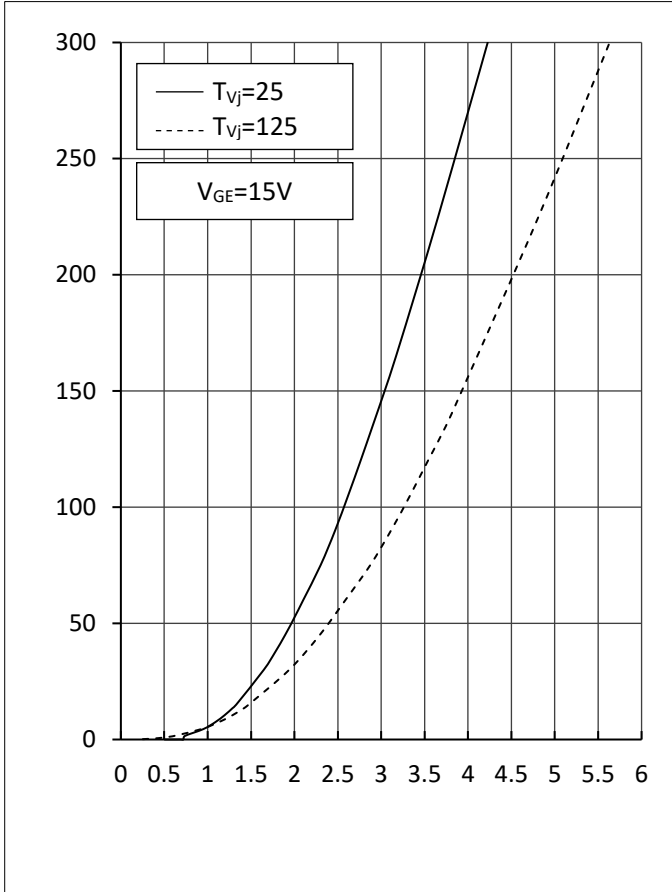
MG150HF12LEC2

● **Module Characteristics** $T_C=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Isolation voltage	V_{isol}	$t=1\text{min}, f=50\text{Hz}$	2500			V
Maximum Junction Temperature	T_{jmax}				150	

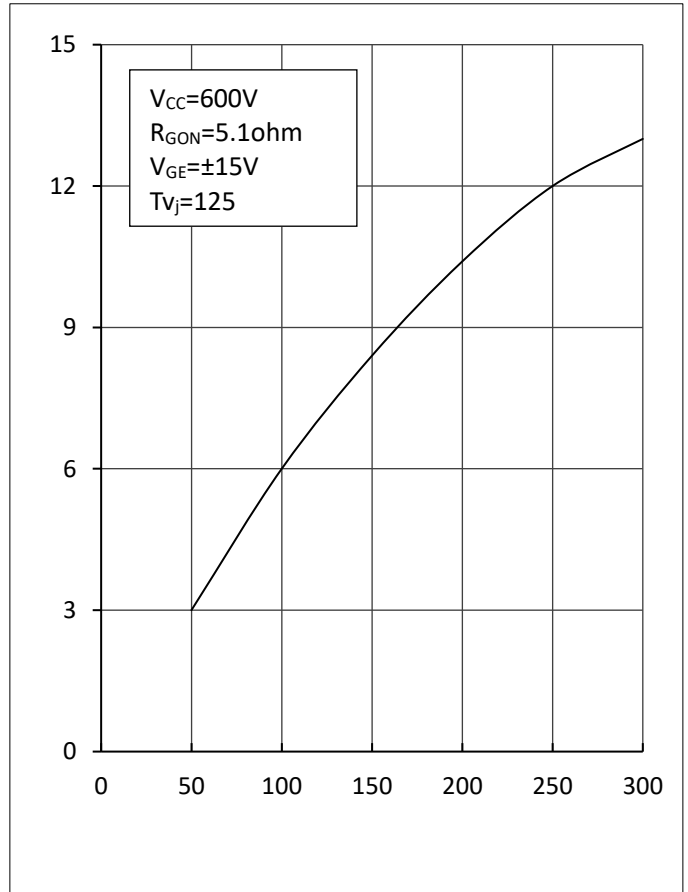
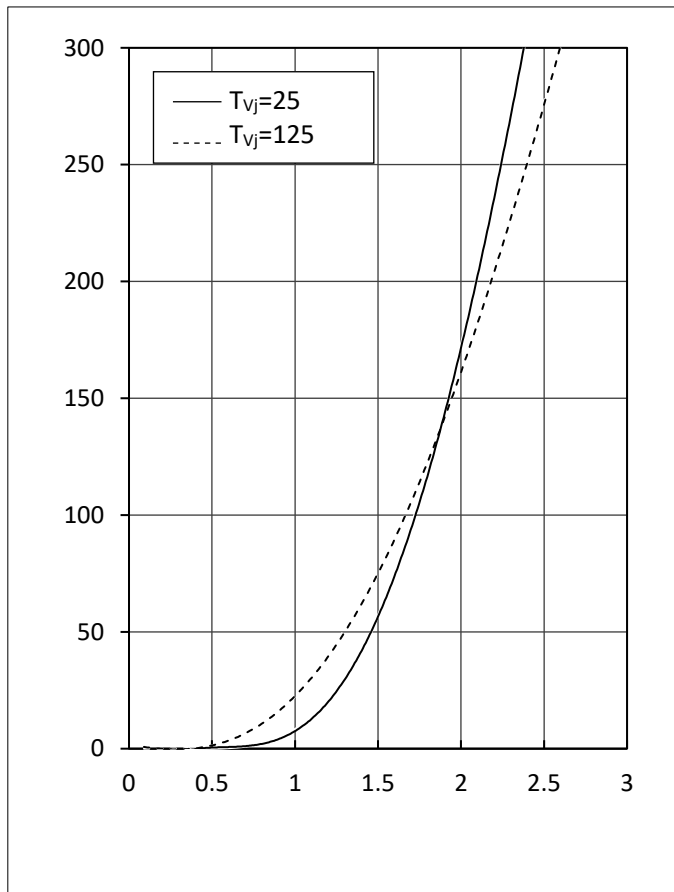
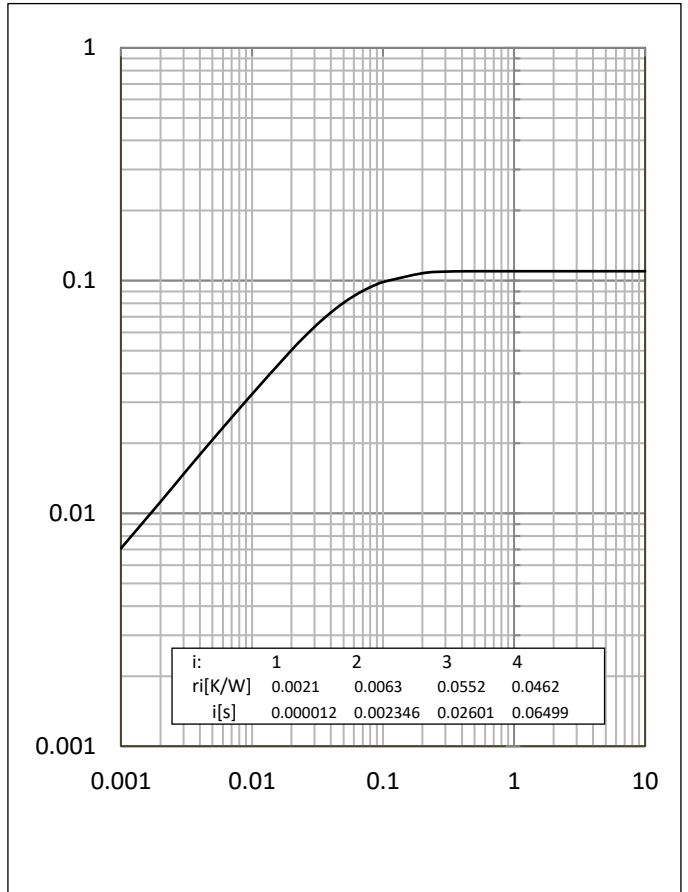
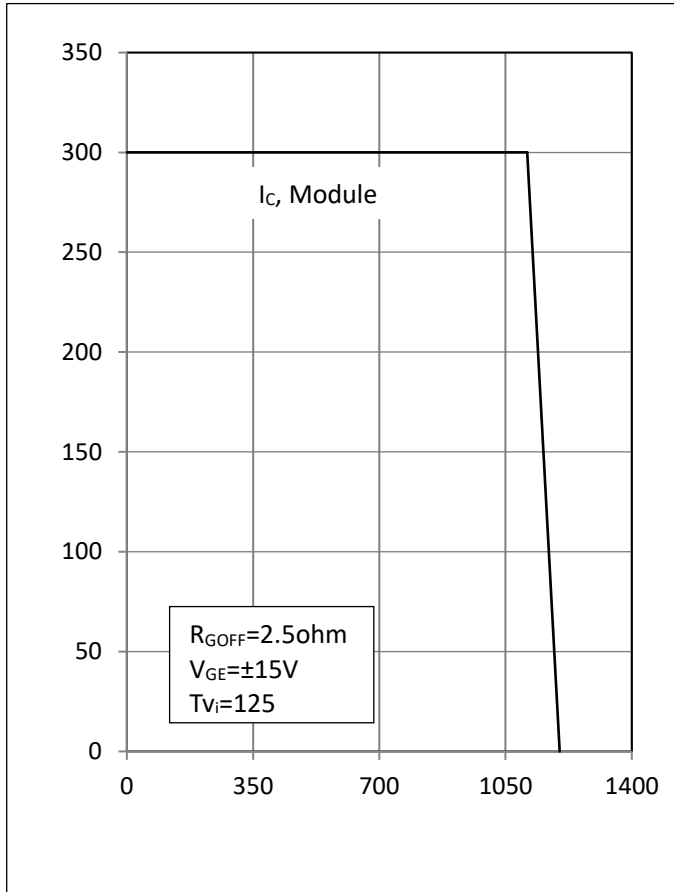


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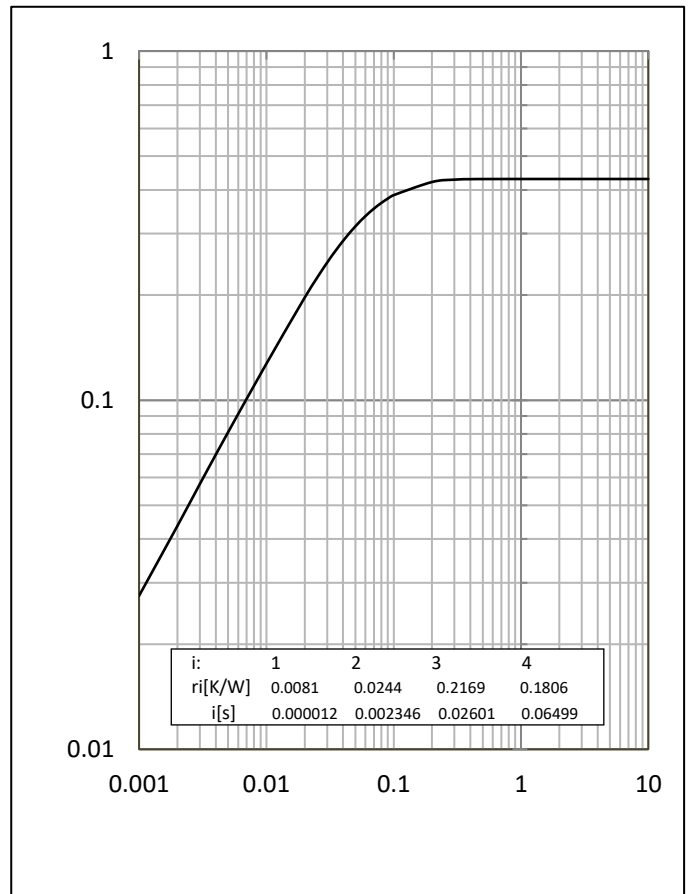
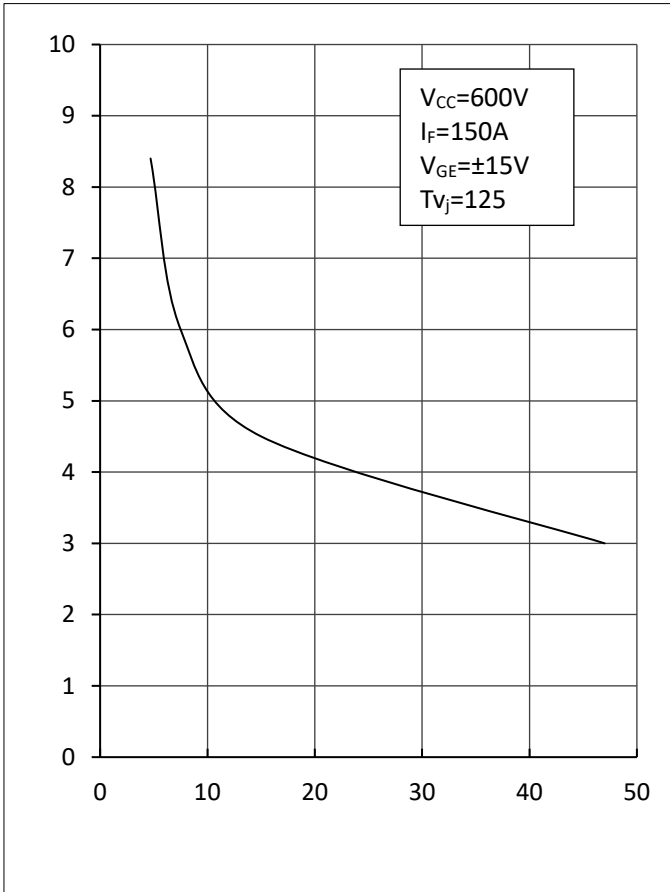


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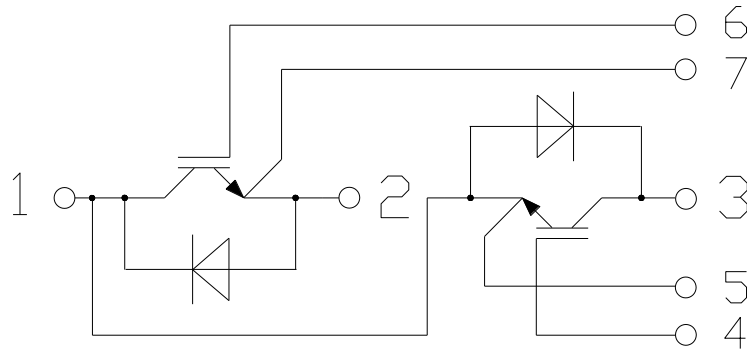
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● Circuit Diagram



● Package Outline Information

Dimensions in Millimeters

