



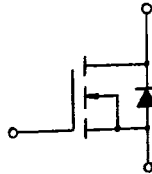
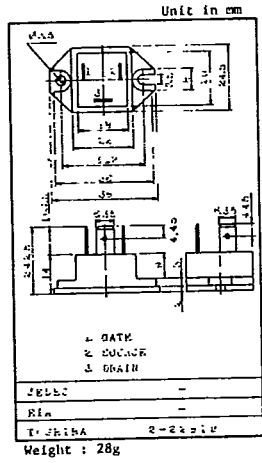
**SEMICONDUCTOR**  
TECHNICAL DATA

MG15G1AM1  
MG15G4GM1 (450V/15A)  
MG15G6EM1

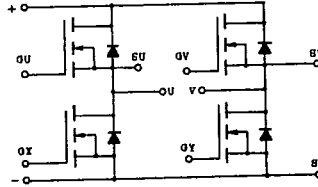
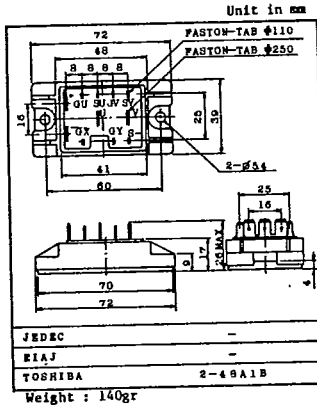
EQUIVALENT CIRCUIT

OUTLINE

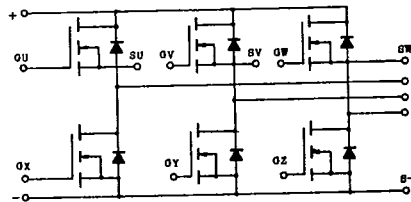
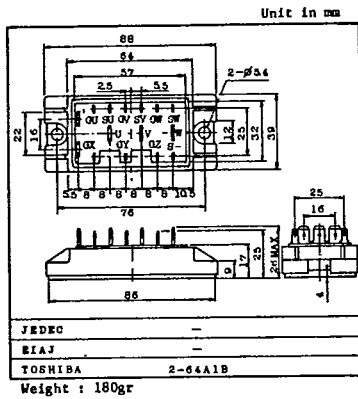
MG15G1AM1



MG15G4GM1



MG15G6EM1



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## SEMICONDUCTOR

## TECHNICAL DATA

MG15G1AM1

MG15G4GM1

MG15G6EM1

## MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V <sub>DSS</sub>	450	V
Gate-Source Voltage		V <sub>GSS</sub>	±20	V
Drain Current	DC	I <sub>D</sub>	±15	A
	Peak		±30	
Drain Power Dissipation (Tc=25°C)		P <sub>D</sub>	125	W
Channel Temperature		T <sub>ch</sub>	150	°C
Storage Temperature Range		T <sub>stg</sub>	-40 ~ 125	°C
Isolation Voltage		V <sub>Isol</sub>	2500 (AC 1 Minute)	V
Screw Torque		-	30	kg·cm

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0	-	-	±100	nA
Drain Cut-off Current		I <sub>DSS</sub>	V <sub>DS</sub> =450V, V <sub>GS</sub> =0	-	-	1.0	mA
Drain-Source Breakdown Voltage		V(BR) <sub>DSS</sub>	I <sub>D</sub> =10mA, V <sub>GS</sub> =0	450	-	-	V
Gate Threshold Voltage		V <sub>th</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.5	-	3.5	V
Forward Transfer Admittance		Y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =15A	4.0	7.0	-	S
Drain-Source ON Resistance		R <sub>DS(ON)</sub>	I <sub>D</sub> =15A, V <sub>GS</sub> =10V	-	-	0.4	Ω
Source Drain Forward Voltage		V <sub>SDF</sub>	I <sub>D</sub> =-15A, V <sub>GS</sub> =0	-	-	1.8	V
Input Capacitance		C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0, f=1MHz	-	4500	-	pF
Switching Time	Rise Time	t <sub>r</sub>		-	250	500	ns
	Turn-on Time	t <sub>on</sub>		-	300	600	ns
	Fall Time	t <sub>f</sub>		-	250	500	ns
	Turn-off Time	t <sub>off</sub>		-	1000	2000	ns
Reverse Recovery Time		t <sub>rr</sub>	I <sub>D</sub> =-15A, R <sub>G</sub> =220Ω V <sub>GS</sub> =-15V, di/dt=60A/µs	-	300	600	ns

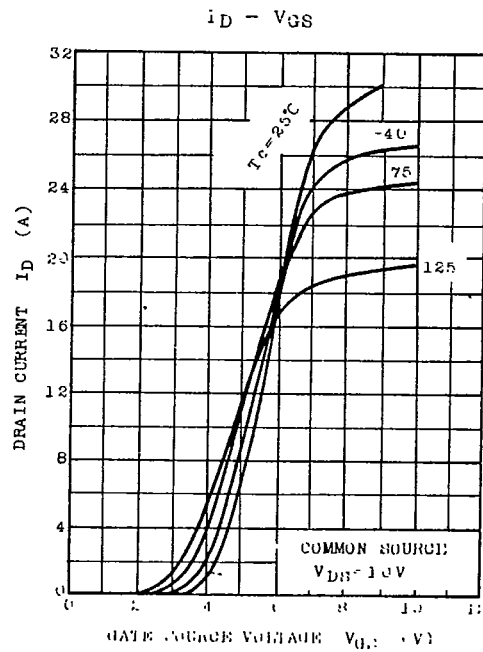
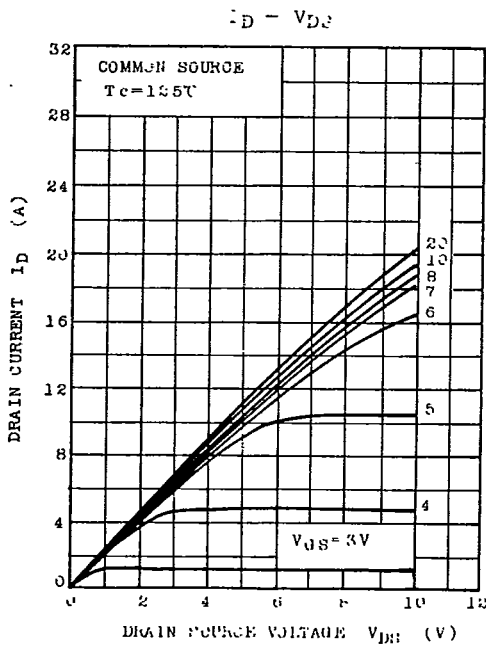
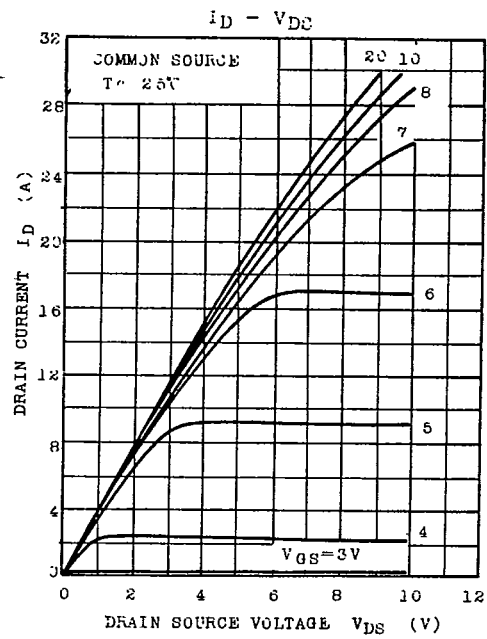
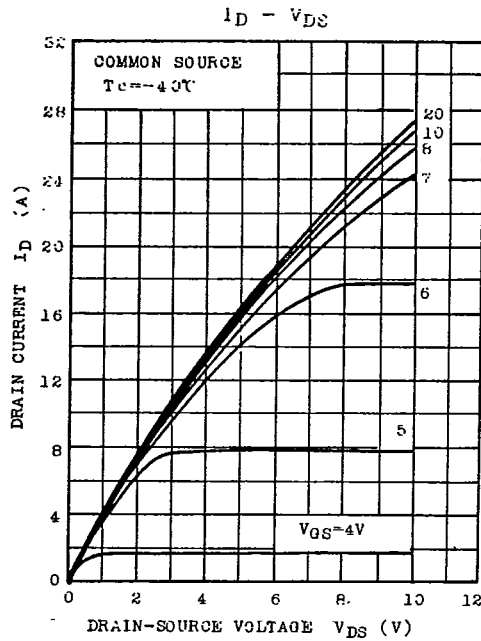
TOSHIBA CORPORATION

GT1A2A



**SEMICONDUCTOR**  
TECHNICAL DATA

MG15G1AM1  
MG15G4GM1  
MG15G6EM1



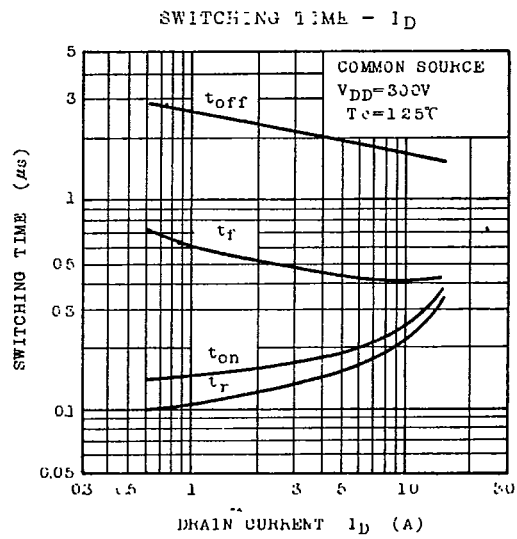
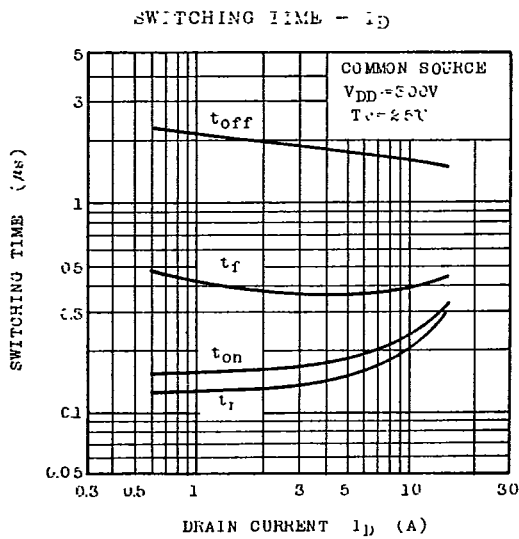
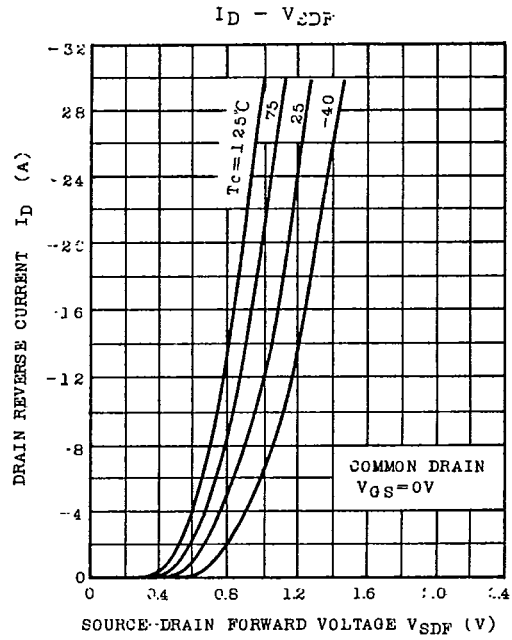
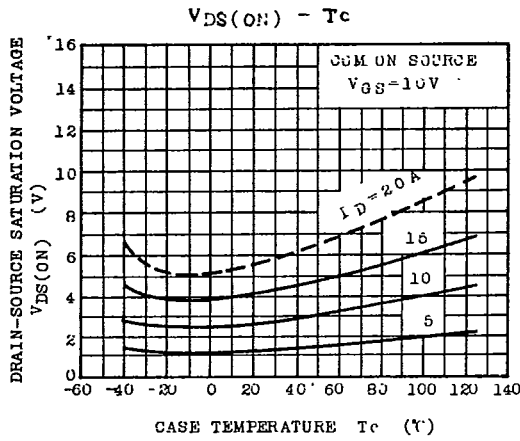
TOSHIBA CORPORATION

GT1A2A



**SEMICONDUCTOR**  
 TECHNICAL DATA

MG15G1AM1  
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TOSHIBA CORPORATION



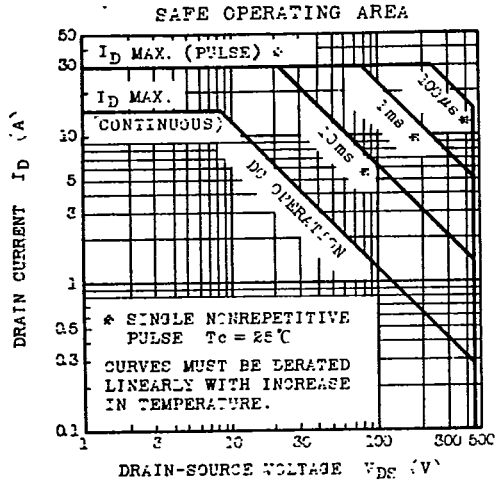
SEMICONDUCTOR

TECHNICAL DATA

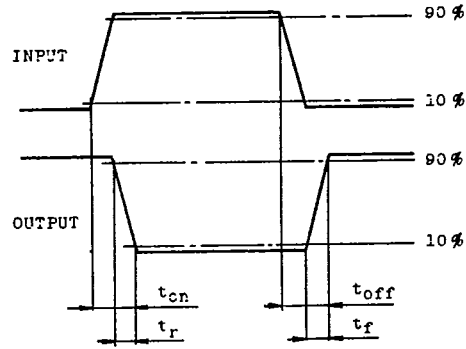
MG15G1AM1

MG15G4GM1

MG15G6EM1



SWITCHING TIME TEST (WAVEFORM)

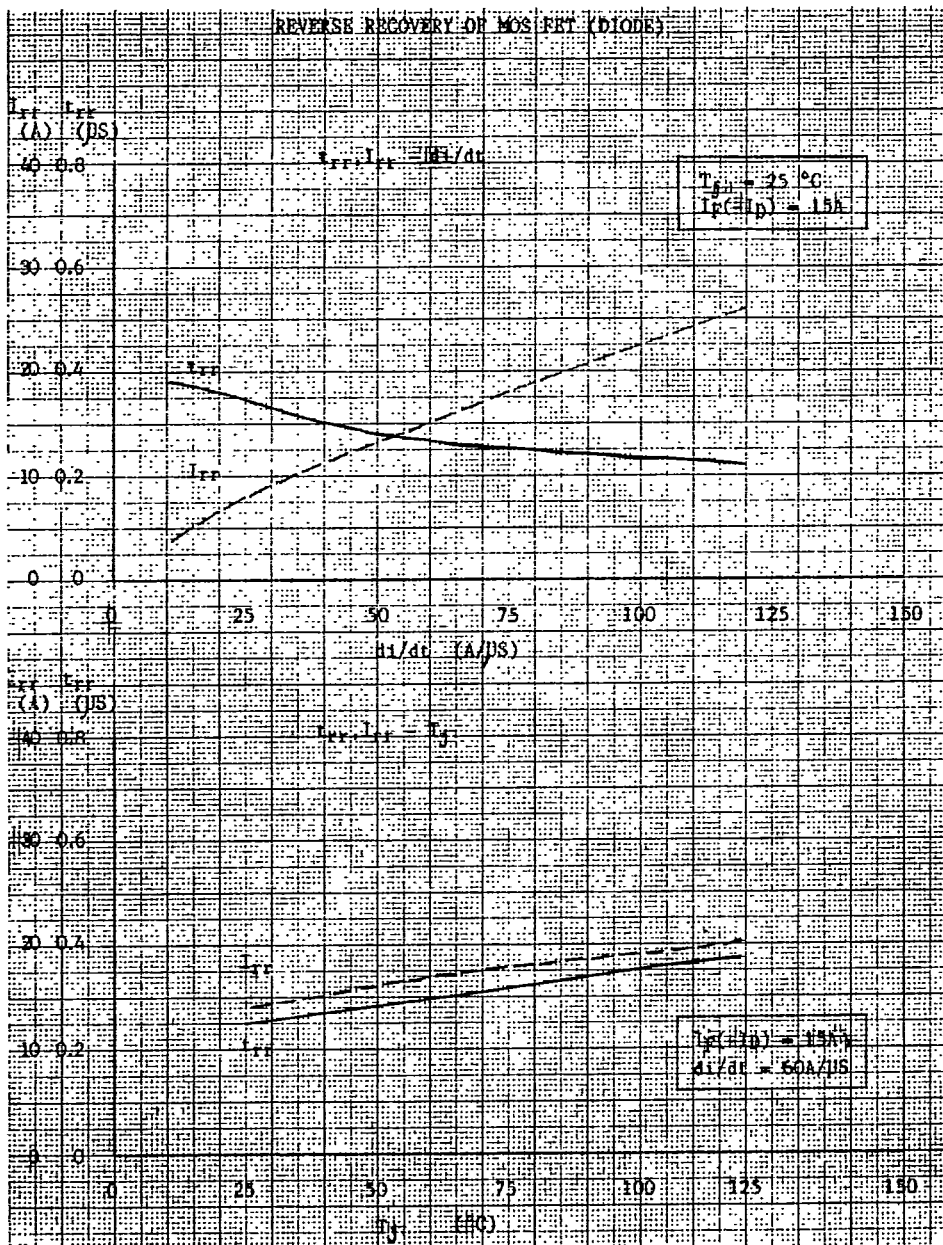


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**SEMICONDUCTOR**  
 TECHNICAL DATA

MG15G1AM1  
 MG15G4GM1  
 MG15G6EM1



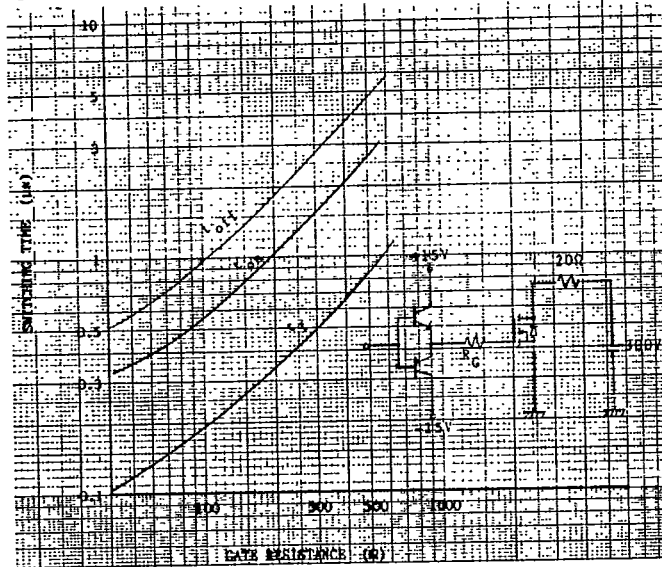
TOSHIBA CORPORATION



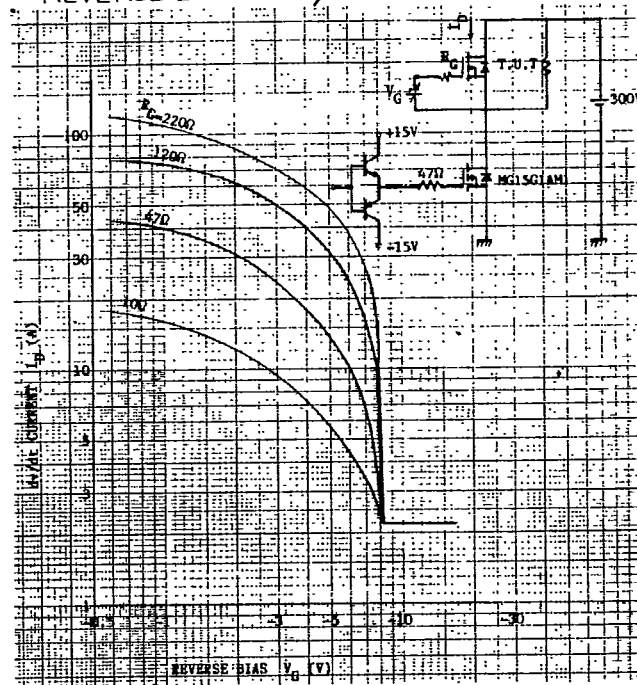
**SEMICONDUCTOR**  
TECHNICAL DATA

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MG15G4GM1  
MG15G6EM1

GATE RESISTANCE — SWITCHING TIME



REVERSE BIAS —  $dv/dt$  CURRENT



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