SEMICONDUCTOR
TECHNICAL DATA

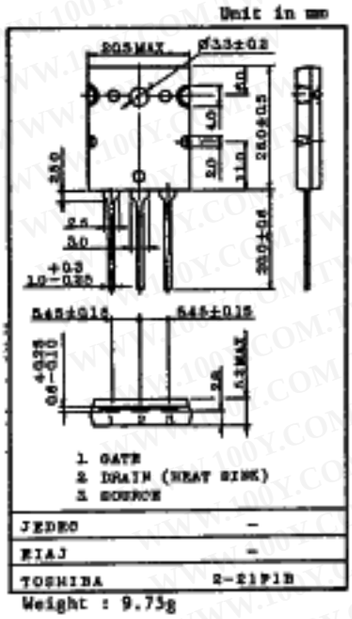
2SK578 T-39-27

MG15C4HM1 (150V/15A)

OUT LINE

2SK578

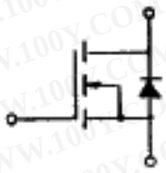
Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-21F1B

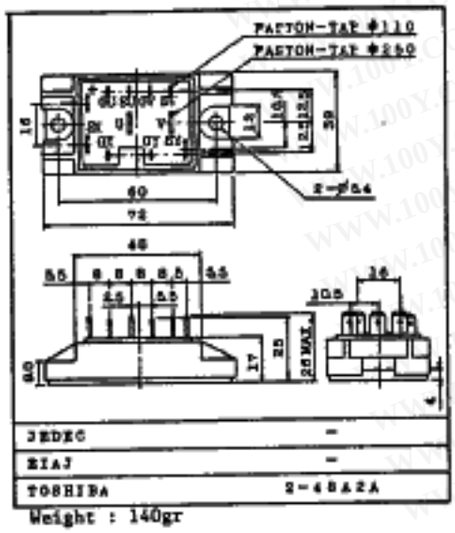
Weight : 9.75g

EQUIVALEN CIRCUIT



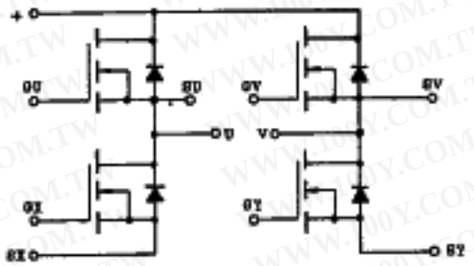
MG15C4HM1

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-48A2A

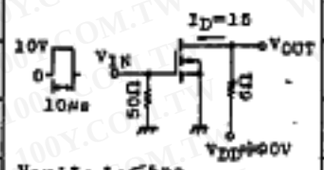
Weight : 140gr



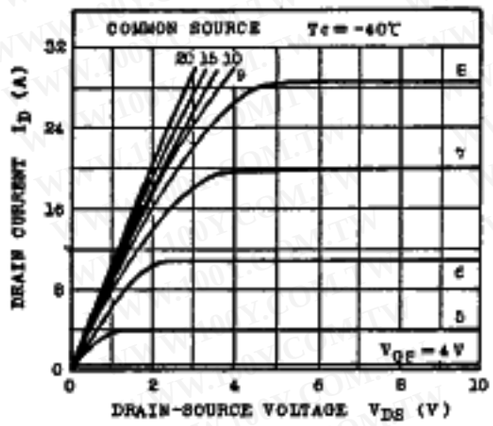
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RAING 2SK578	MG15C4HM1	UNIT
Drain-Source Voltage		V_{DSS}	150	150	V
Gate-Source Voltage		V_{GSS}	±20	±20	V
Drain Current	DC	I_D	±15	±15	A
	Peak		±30	±30	A
Drain Power Dissipation (Tc=25°C)		P_D	120	65	W
Channel Temperature		T_{ch}	150	150	°C
Storage Temperature Range		T_{stg}	-55~150	-40~125	°C
Isolation Voltage		V_{Isol}	—	2500 (AC.1 Min.)	V
Screw Torque		-	—	30	Kg.cm

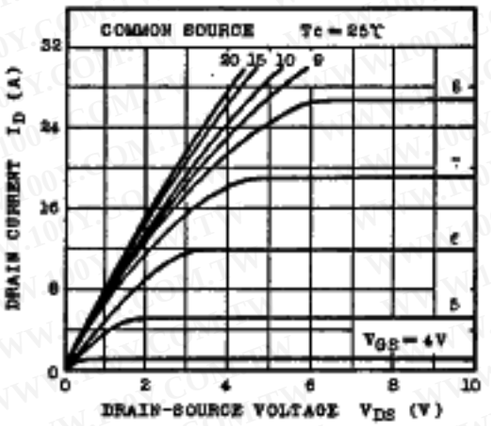
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	V_{GS}=±20V, V_{DS}=0	-	-	±100	nA
Drain Cut-off Current		I_{DSS}	V_{DS}=150V, V_{GS}=0	-	-	1.0	mA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	I_D=10mA, V_{GS}=0	150	-	-	V
Gate Threshold Voltage		V_{th}	V_{DS}=10V, I_D=1mA	1.5	-	3.5	V
Forward Transfer Admittance		$\|Y_{fs}\|$	V_{DS}=10V, I_D=15A	4.0	7.0	-	S
Drain-Source ON Resistance		$R_{DS(ON)}$	I_D=15A, V_{GS}=10V	-	0.15	0.22	Ω
Source Drain Forward Voltage		V_{SDF}	I_S=15A, V_{GS}=0	-	1.3	1.8	V
Input Capacitance		C_{iss}	V_{DS}=10V, V_{GS}=0, f=1MHz	-	1300	-	pF
Switching Time	Rise Time	t_r		-	400	800	ns
	Turn-on Time	t_{on}		-	500	1000	ns
	Fall Time	t_f		-	100	200	ns
	Turn-off Time	t_{off}	V_{IN}: t_r, t_f<5ns D.U≦1% (Z_{OUT}=50Ω)	-	300	600	ns
Reverse Recovery Time		t_{rr}	I_D=-15A, R_G=220Ω V_{GS}=-15V, di/dt=60A/μs	-	200	400	ns

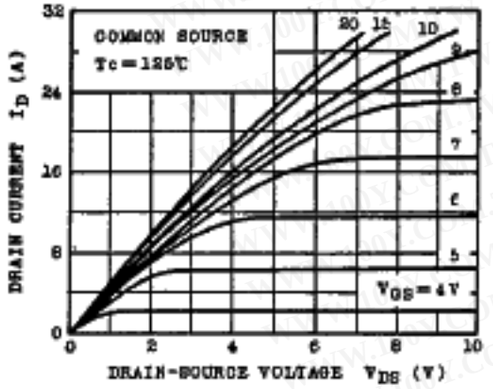
$I_D - V_{DS}$



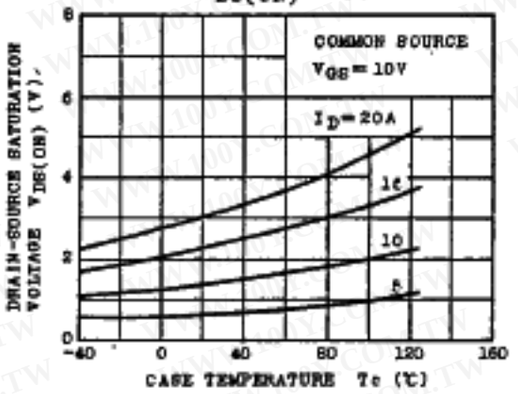
$I_D - V_{DS}$



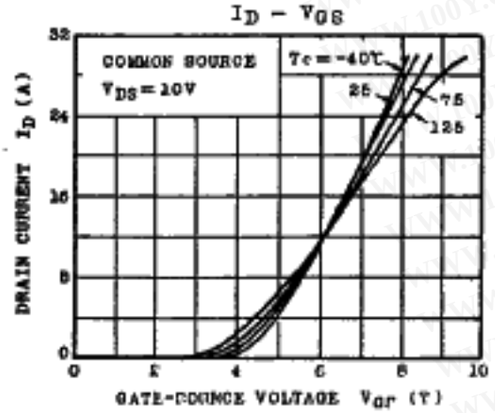
$I_D - V_{DS}$



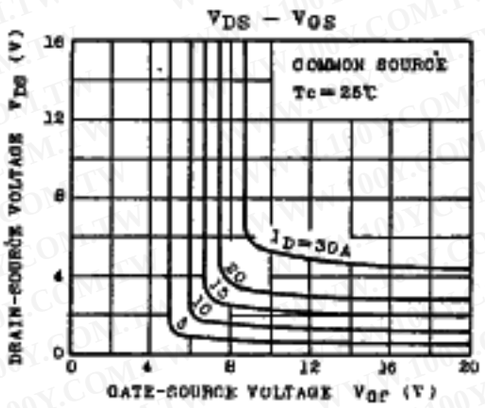
$V_{DS(ON)} - Tc$



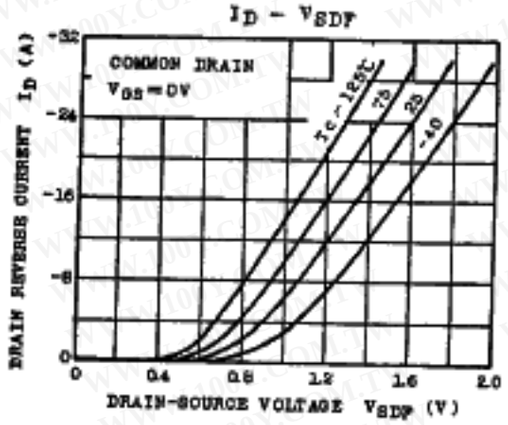
$I_D - V_{GS}$



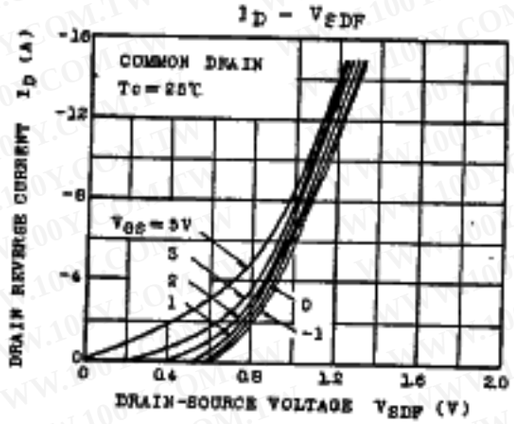
$V_{DS} - V_{GS}$



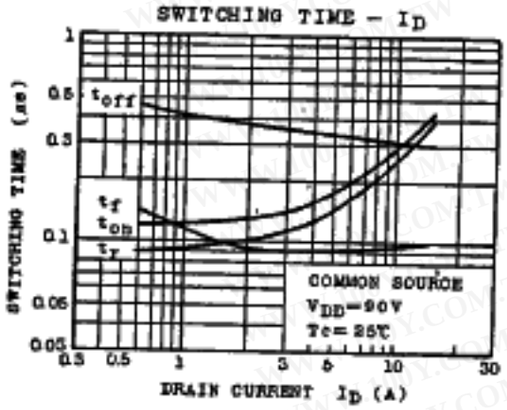
$I_D - V_{SDF}$



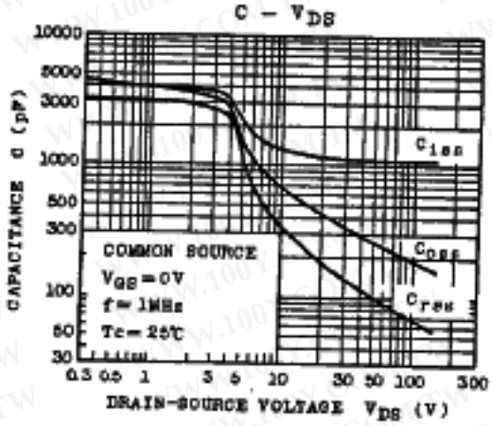
$I_D - V_{SDF}$



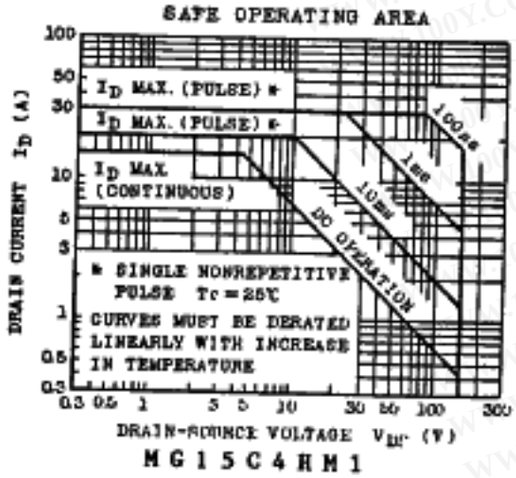
SWITCHING TIME – I_D



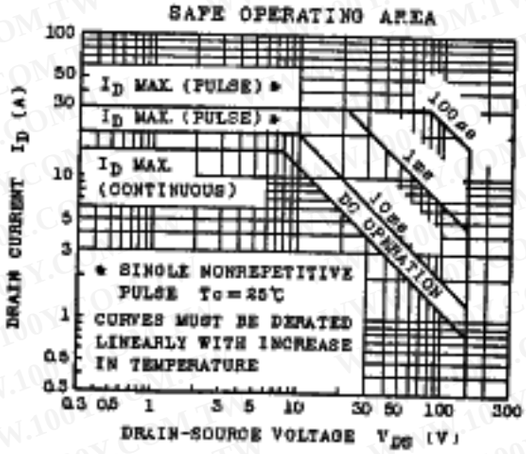
C – V_{DS}



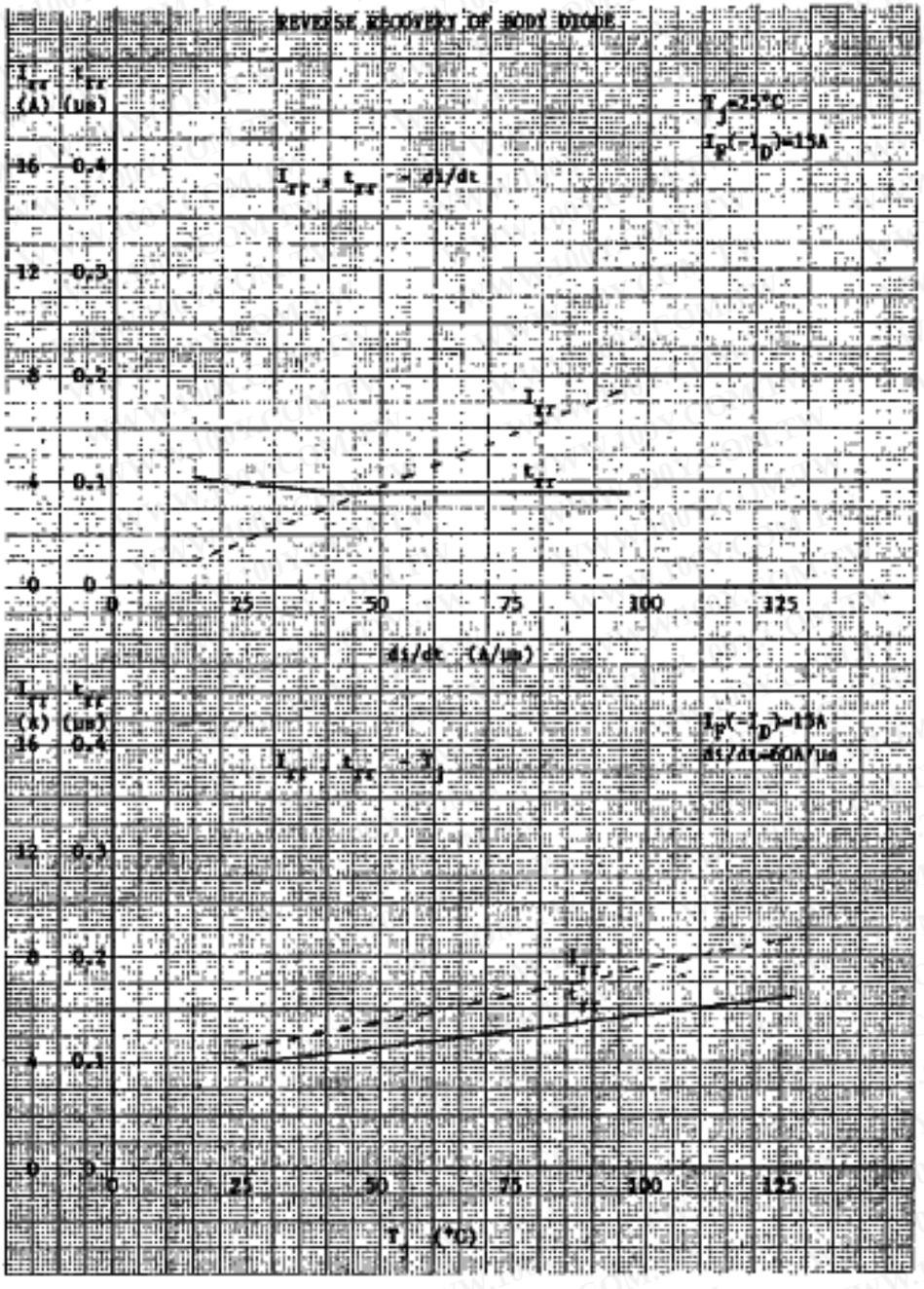
SAFE OPERATING AREA



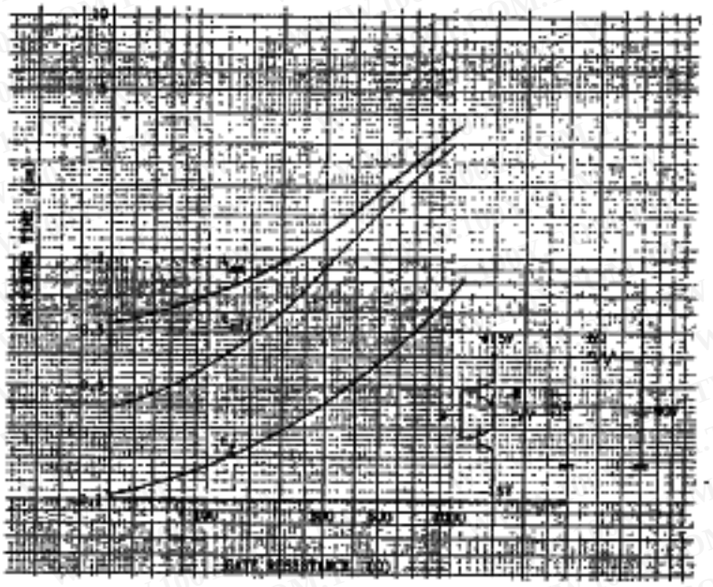
SAFE OPERATING AREA



MG15C4HM1



GATE RESISTANCE DEPENDENCE OF SWITCHING TIME



REVERSE BIAS DEPENDENCE OF dv/dt CURRENT