

Field Effect Transistor

Silicon N Channel MOS Type (τ-MOS III.5)

High Speed, High Current Switching Applications

Features

- Low Drain-Source ON Resistance
 - $R_{DS(ON)} = 0.9\Omega$ (Typ.)
- High Forward Transfer Admittance
 - $|Y_{fs}| = 3.0S$ (Typ.)
- Low Leakage Current
 - $I_{DSS} = 100\mu A$ (Max.) ($V_{DS} = 600V$)
- Enhancement-Mode
 - $V_{th} = 2.1 \sim 4.0V$ ($V_{DS} = 10V$, $I_D = 1mA$)

Absolute Maximum Ratings ($T_a = 25^\circ C$)

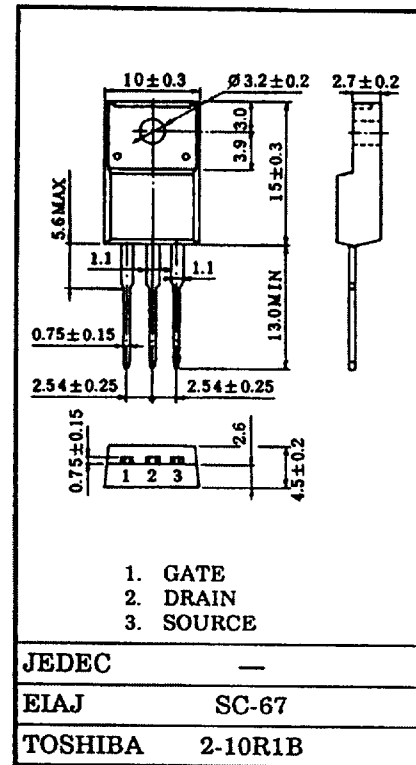
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	600	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)	V_{DGR}	600	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current	DC	I_D	A
	Pulse	I_{DP}	
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	40	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature	T_{stg}	$-55 \sim 150$	$^\circ C$

Thermal Characteristics

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	3.125	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	62.5	$^\circ C/W$

This transistor is an electrostatic sensitive device. Please handle with caution.

Unit in mm



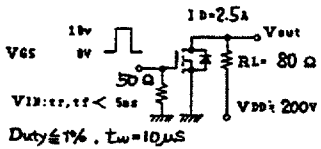
JEDEC

EIAJ SC-67

TOSHIBA 2-10R1B

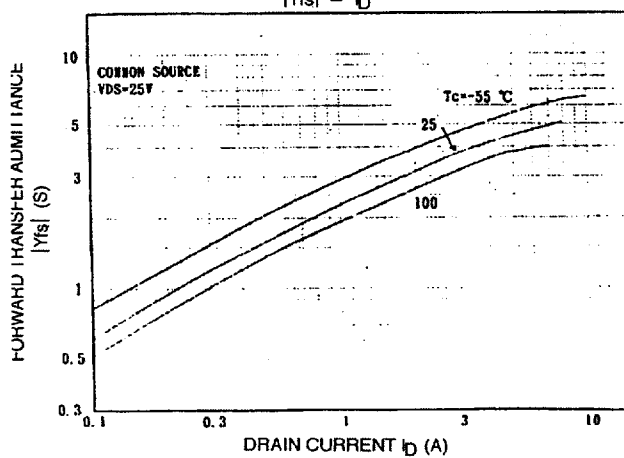
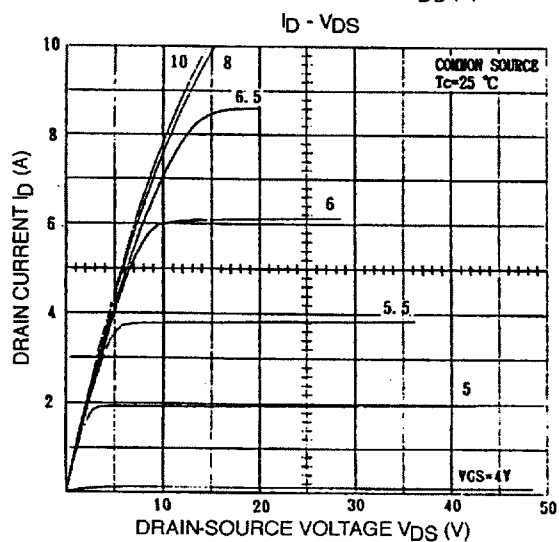
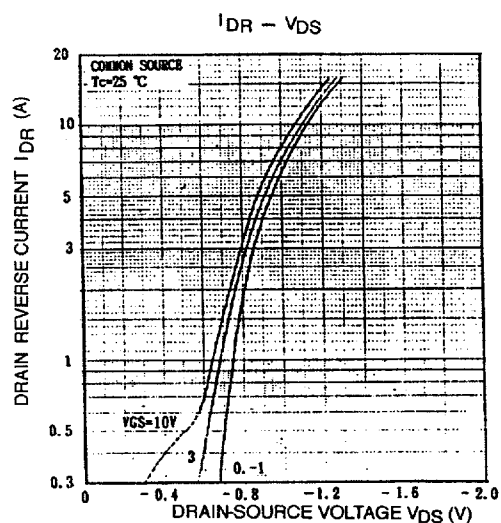
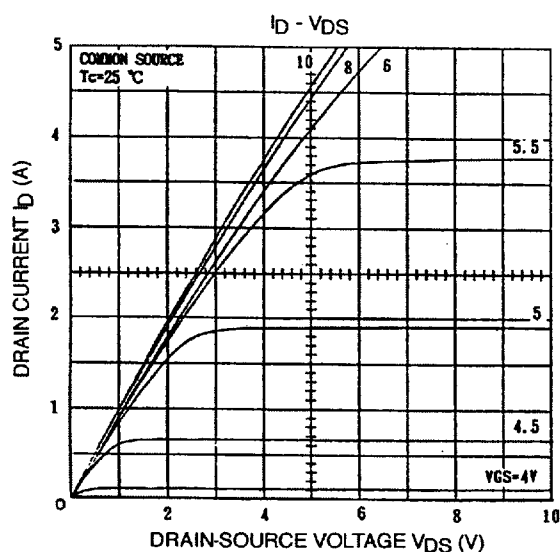
Weight : 1.9g

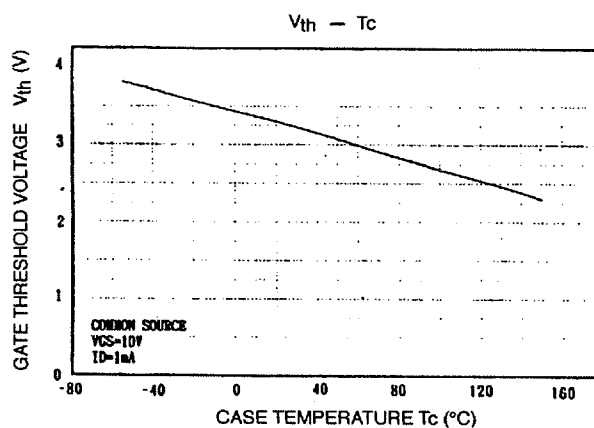
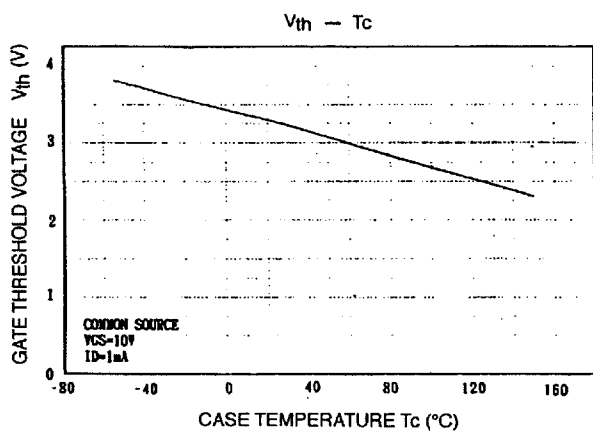
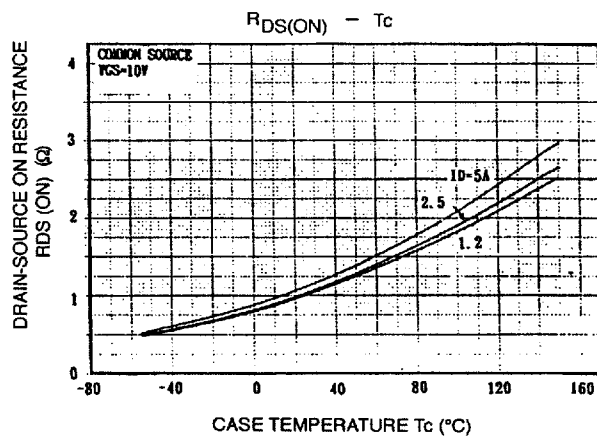
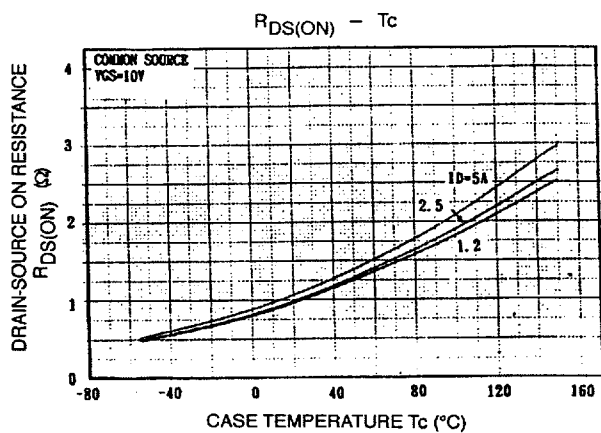
Electrical Characteristics (Ta = 25°C)

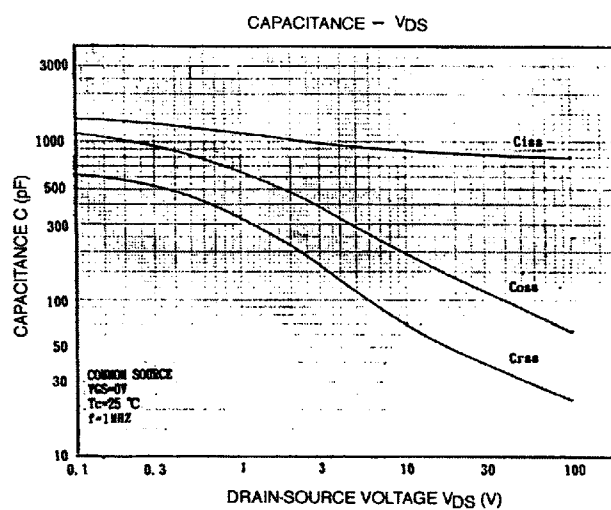
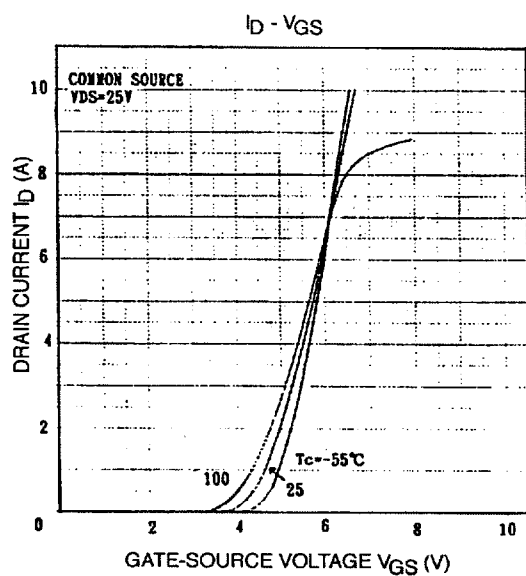
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 30V, V_{DS} = 0V$	—	—	± 100	nA
Drain Cut-off Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$	—	—	100	μA
Drain-Source Breakdown Voltage	$V_{(BR) DSS}$	$I_D = 250\mu A, V_{GS} = 0V$	600	—	—	V
Gate Threshold Voltage	V_{th}	$V_{DS} = -10V, I_D = -1mA$	2.1	—	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 10A, I_D = 2.5A$	—	0.9	1.8	Ω
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 25V, I_D = 2.5A$	1.5	3.0	—	S
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$	—	880	1400	pF
Reverse Transfer Capacitance	C_{rss}		—	40	60	
Output Capacitance	C_{oss}		—	130	200	
Switching Time	Rise Time		—	25	50	ns
	Turn-on Time		—	40	80	
	Fall Time		—	45	90	
	Turn-off Time		—	130	260	
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q_g	$V_{DD} = 400V, V_{GS} = -10V,$ $I_D = 4A$	—	25	50	nC
Gate-Source Charge	Q_{gs}		—	12.5	—	
Gate-Drain ("Miller") Charge	Q_{gd}		—	12.5	—	

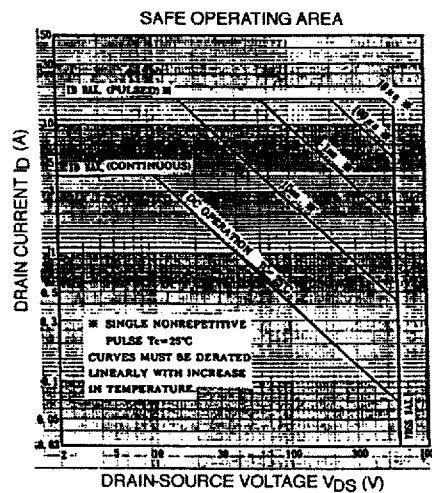
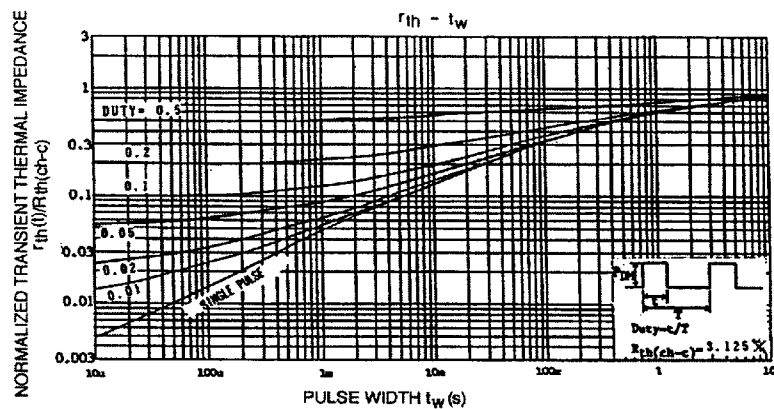
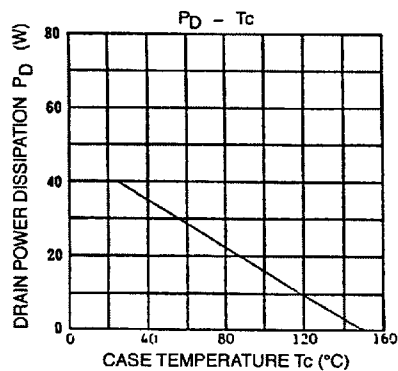
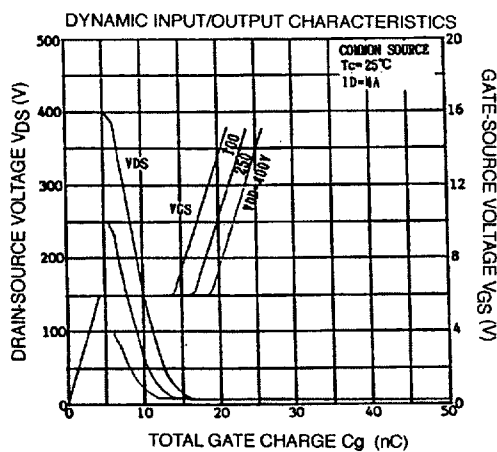
Source-Drain Diode Ratings and Characteristics (Ta = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	4	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	16	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 8A, V_{GS} = 0V$	—	—	-1.5	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 4A, V_{GS} = 0V$	—	300	—	nS
Reverse Recovered Charge	Q_{rr}	$dI_{DR}/dt = 100A/\mu s$	—	3	—	μC









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