

### Field Effect Transistor

#### Silicon N Channel MOS Type (n-MOS III.5)

#### High Speed, High Current Switching Applications

##### Features

- Low Drain-Source ON Resistance
  - $R_{DS(ON)} = 1.9\Omega$  (Typ.)
- High Forward Transfer Admittance
  - $|Y_{fs}| = 3.0S$  (Typ.)
- Low Leakage Current
  - $I_{DSS} = 100\mu A$  (Max.) @  $V_{DS} = 600V$
- Enhancement-Mode
  - $V_{th} = 2.1 \sim 4.0V$  @  $V_{DS} = 10V, I_b = -1mA$

##### Absolute Maximum Ratings (Ta = 25°C)

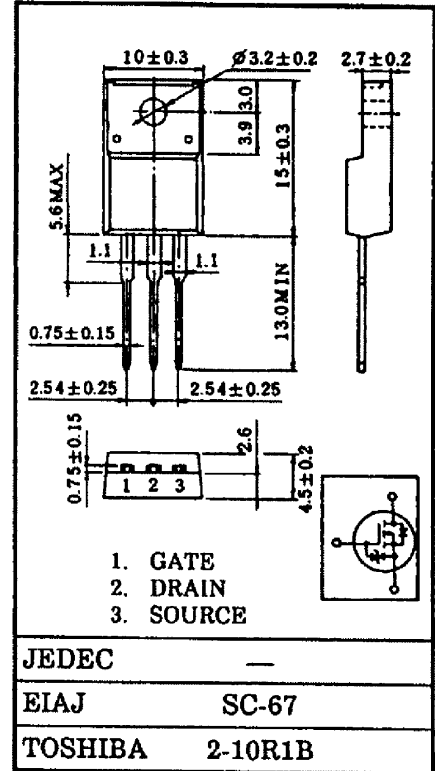
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DSS}$	600	V
Drain-Gate Voltage ( $R_{DS} = 20k\Omega$ )	$V_{DGR}$	600	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current	DC	$I_b$	3.5
	Pulse	$I_{bP}$	14
Drain Power Dissipation (Tc = 25°C)	$P_D$	40	W
Channel Temperature	$T_{ch}$	150	°C
Storage Temperature	$T_{stg}$	-55 ~ 150	°C

##### Thermal Characteristics

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

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

Industrial Applications Unit in mm



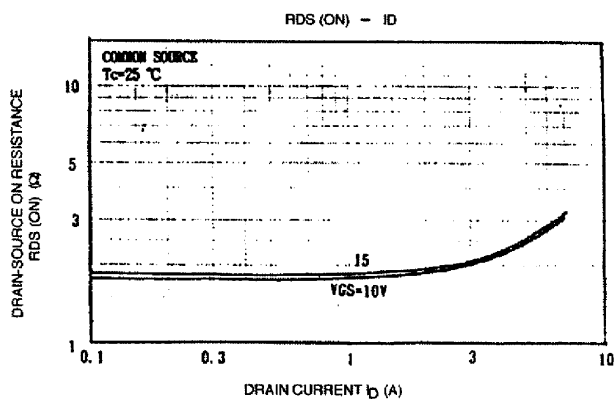
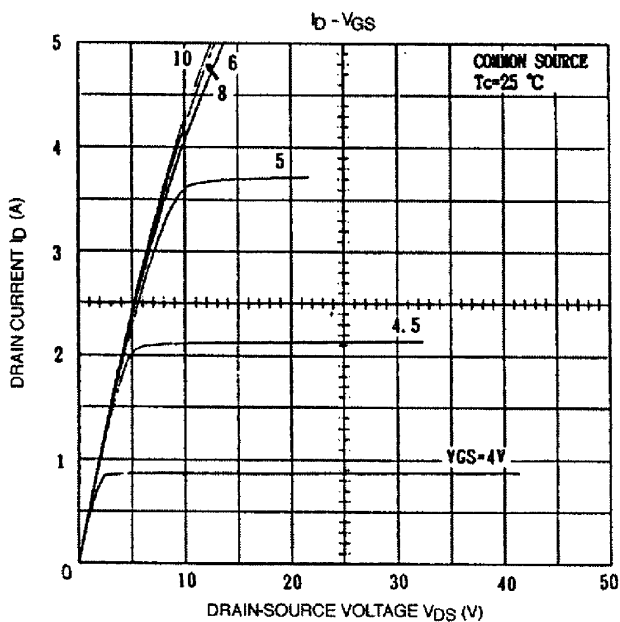
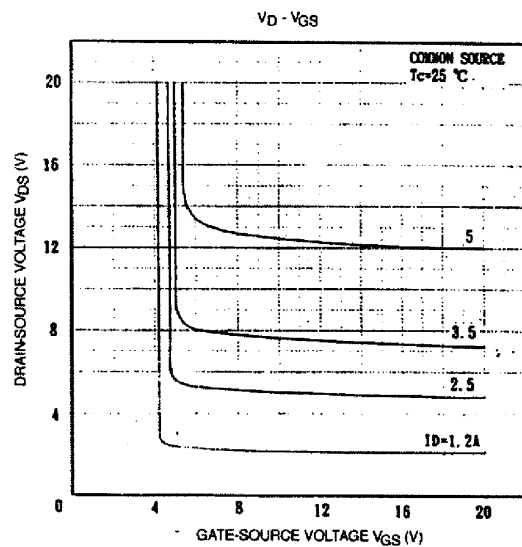
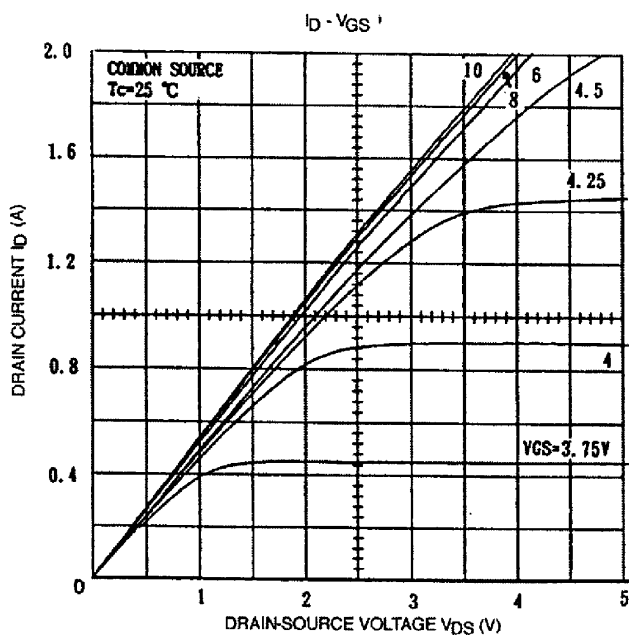
Weight : 1.9g

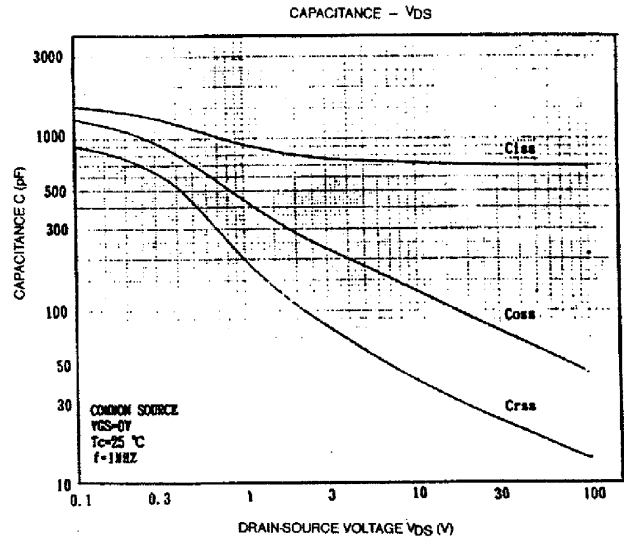
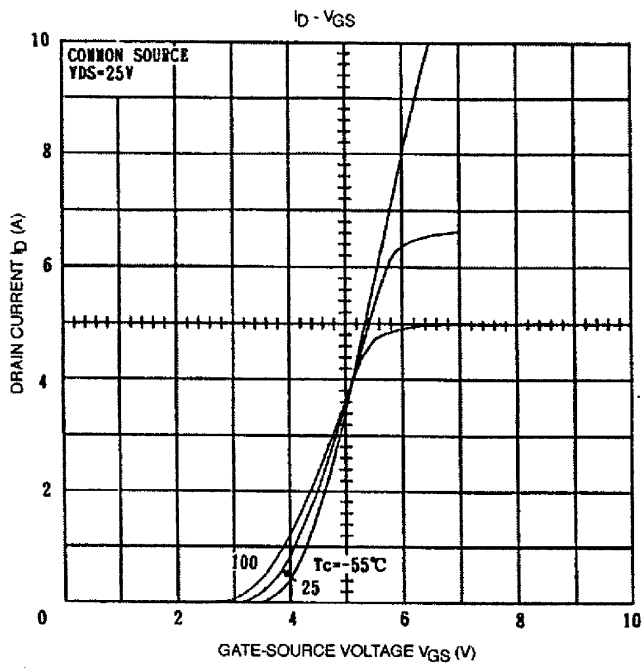
## Electrical Characteristics (Ta = 25°C)

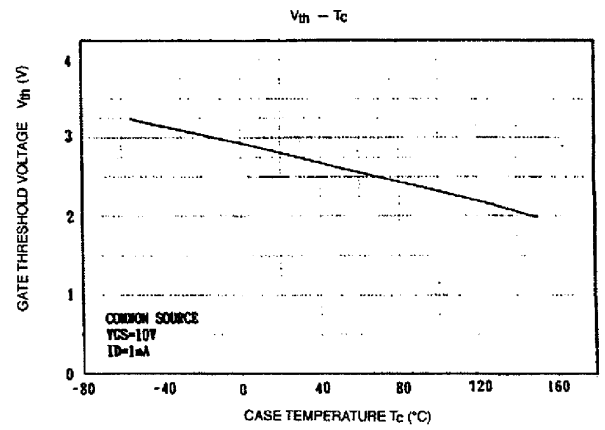
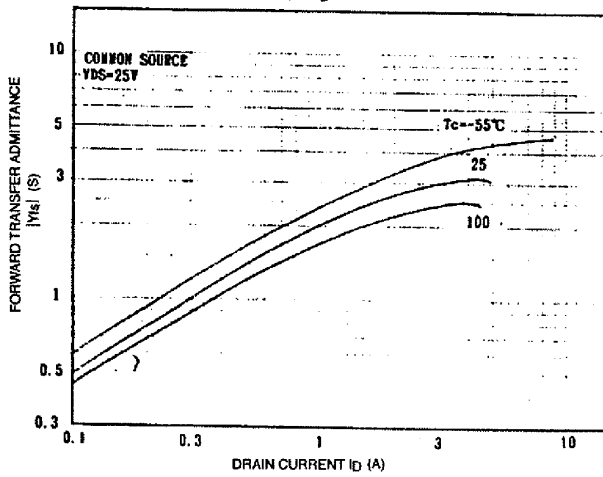
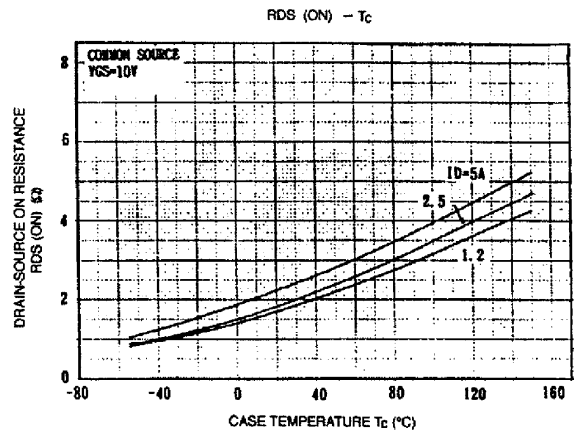
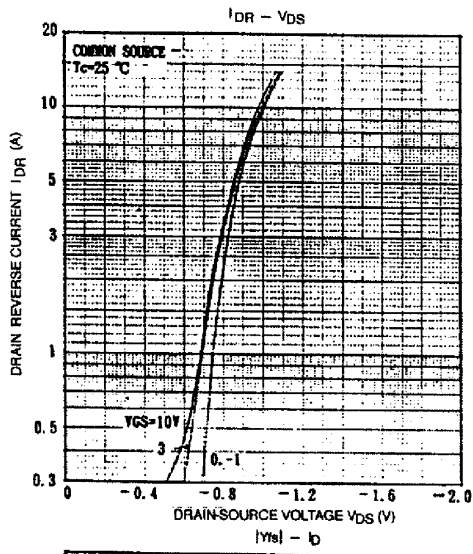
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		$I_{GSS}$	$V_{GS} = \pm 30V, V_{DS} = 0V$	-	-	$\pm 100$	nA
Drain Cut-off Current		$I_{DSS}$	$V_{DS} = 600V, V_{GS} = 0V$	-	-	100	$\mu A$
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = 250\mu A, V_{GS} = 0V$	600	-	-	V
Gate Threshold Voltage		$V_{th}$	$V_{DS} = -10V, I_D = -1mA$	2.1	-	4.0	V
Drain-Source ON Resistance		$r_{DS(ON)}$	$I_D = 2.5A, V_{GS} = 10V$	-	1.9	2.5	$\Omega$
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 25V, I_{DS} = 2.5A$	1.5	3.0	-	S
Input Capacitance		$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$	-	600	1000	$\mu F$
Reverse Transfer Capacitance		$C_{rss}$		-	30	50	
Output Capacitance		$C_{oss}$		-	100	150	
Switching Time	Rise Time	$t_r$		-	20	40	ns
	Turn-on Time	$t_{on}$		-	60	120	
	Fall Time	$t_f$		-	30	60	
	Turn-off Time	$t_{off}$		-	120	240	
Total Gate Charge (Gate-Source Plus Gate-Drain)		$Q_g$	$V_{DD} = 400V, V_{GS} = -10V,$ $I_D = -3.5A$	-	35	70	nC
Gate-Source Charge		$Q_{gs}$		-	20	-	
Gate-Drain ("Miller") Charge		$Q_{gd}$		-	15	-	

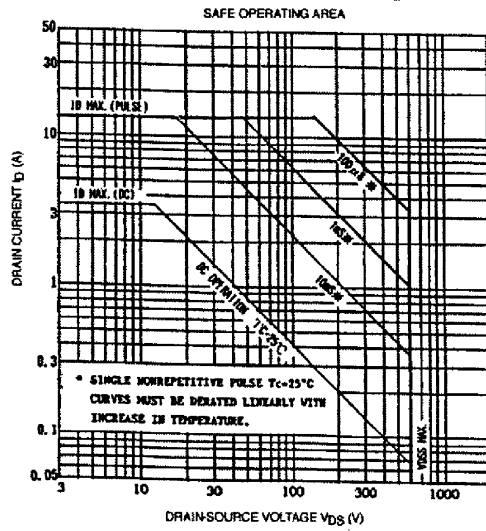
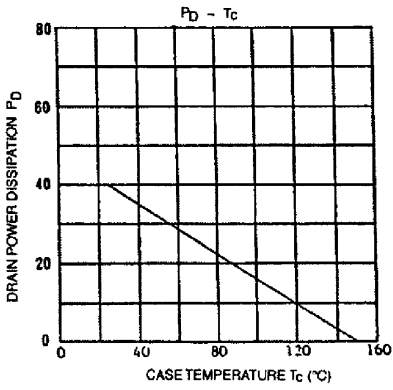
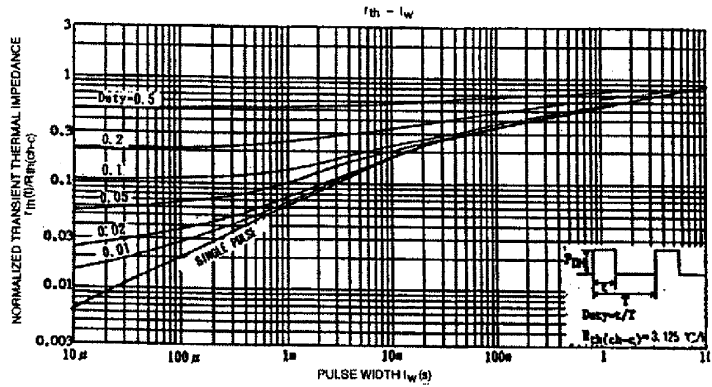
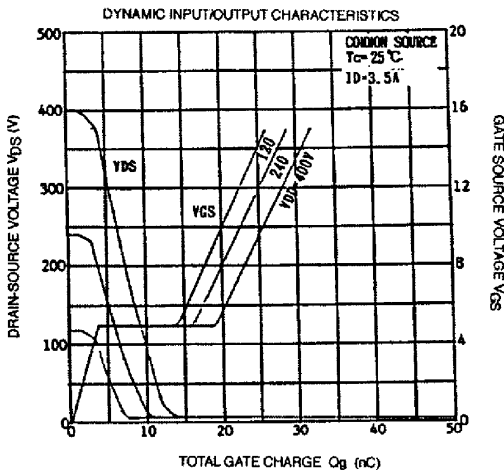
## Source-Drain Diode Ratings and Characteristics (Ta = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	$I_{DR}$	-	-	-	3.5	A
Pulse Drain Reverse Current	$I_{DRP}$	-	-	-	14	A
Diode Forward Voltage	$V_{DSF}$	$I_{DR} = 3.5A, V_{GS} = 0V$	-	-	-1.8	V
Reverse Recovery Time	$t_r$	$I_{DR} = 3.5A, V_{GS} = 0V$	-	250	-	ns
Reverse Recovered Charge	$Q_r$	$dI_{DR}/dt = 100A/\mu s$	-	2.0	-	$\mu C$









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