

Field Effect Transistor

Silicon N Channel MOS Type (n-MOS II.5)

High Speed, High Current Switching Applications

Features

- Low Drain-Source ON Resistance
 - $R_{DS(ON)} = 1.0\Omega$ (Typ.)
- High Forward Transfer Admittance
 - $|Y_{fs}| = 4.0S$ (Typ.)
- Low Leakage Current
 - $I_{DSS} = 300\mu A$ (Max.) ($V_{DS} = 0V$)
- Enhancement-Mode
 - $V_{th} = 1.5 \sim 3.5V$ ($V_{DS} = 10V$, $I_D = 1mA$)

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

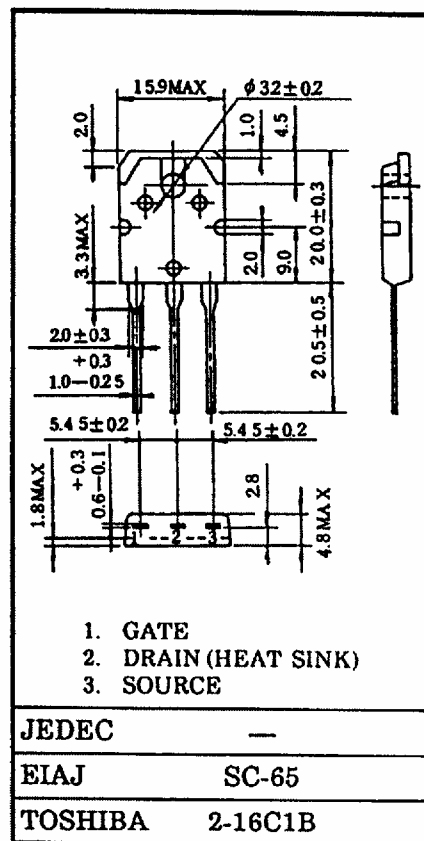
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	800	V
Drain-Gate Voltage ($R_S = 20k\Omega$)	V_{DGR}	800	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current	DC	I_D	A
	Pulse	I_{DP}	
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	150	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ C$

Thermal Characteristics

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	0.833	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	50	$^\circ C/W$

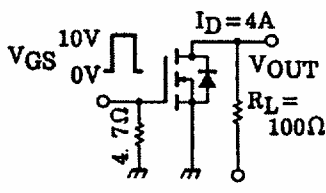
This transistor is an electrostatic sensitive device. Please handle with caution.

Industrial Applications Unit in mm



Weight : 4.6g

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}	$V_{DS} = 800V, V_{GS} = 0V$	—	—	100	μA
Drain-Source Breakdown Voltage		$(V_{BR})_{DSS}$	$I_D = 10mA, V_{GS} = 0V$	800	—	—	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10V, I_D = 1mA$	1.5	—	3.5	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 4A$	—	1.0	1.2	Ω
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 15V, I_D = 4A$	2.0	40	—	S
Input Capacitance		C_{iss}	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$	—	1150	—	pF
Reverse Transfer Capacitance		C_{rss}		—	135	—	
Output Capacitance		C_{oss}		—	210	—	
Switching Time	Rise Time	t_r	 $V_{GS} \begin{matrix} 10V \\ 0V \end{matrix}$ $I_D = 4A$ V_{OUT} $R_L = 100\Omega$ $V_{DD} \approx 400V$ $V_{IN} : t_r, t_f < 5ns,$ $Duty \leq 1\%, t_w = 10\mu s$	—	35	—	ns
	Turn-on Time	t_{on}		—	55	—	
	Fall Time	t_f		—	25	—	
	Turn-off Time	t_{off}		—	100	—	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} = 400V, V_{GS} = -10V,$ $I_D = 9A$	—	85	—	nC
Gate-Source Charge		Q_{gs}		—	40	—	
Gate-Drain ("Miller") Charge		Q_{gd}		—	45	—	

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

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	9	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	27	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 9A, V_{GS} = 0V$	—	—	-2.0	V
Reverse Recovery Time	t_r	$I_{DR} = 9A, V_{GS} = 0V$	—	300	—	ns
Reverse Recovered Charge	Q_r	$dI_{DR}/dt = 100A/\mu s$	—	26	—	μC

