

Field Effect Transistor

Silicon N Channel MOS Type (n-MOS II)

High Speed, High Current Switching, DC-DC Converter,
Chopper Regulator and Motor Drive Applications

Features

- Low Drain-Source ON Resistance
 - $R_{DS(ON)} = 3.6\Omega$ (Typ.)
- High Forward Transfer Admittance
 - $|Y_{fs}| = 0.62S$ (Typ.)
- Low Leakage Current
 - $I_{DSS} = 300\mu A$ (Max.) @ $V_{DS} = 400V$
- Enhancement-Mode
 - $V_{th} = 1.5 \sim 3.5V$ @ $V_{DS} = 10V$, $I_D = 1mA$

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

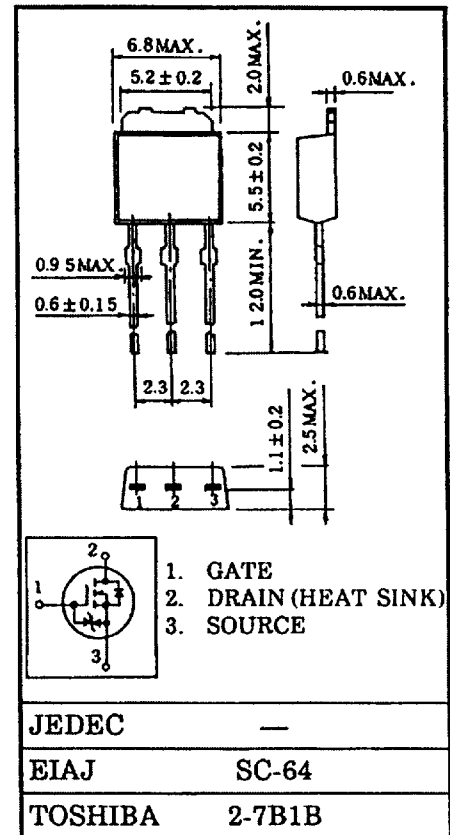
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	400	V
Drain-Gate Voltage ($R_{DS} = 20k\Omega$)	V_{DGR}	400	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current	DC	I_D	1
	Pulse	I_{DP}	
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	10	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$

Thermal Characteristics

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{(ch-c)}$	12.5	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{(ch-a)}$	125	$^\circ C/W$

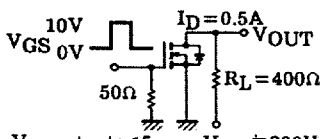
This transistor is an electrostatic sensitive device. Please handle with care.

Unit in mm



Weight : 0.35g

Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	—	—	± 100	nA
Drain Cut-off Current	I_{DSS}	$V_{DS} = 400V, V_{GS} = 0V$	—	—	300	μA
Drain-Source Breakdown Voltage	$V_{(BR) DSS}$	$I_D = 10mA, V_{GS} = 0V$	400	—	—	V
Gate Threshold Voltage	V_{th}	$V_{DS} = 10V, I_D = 1mA$	1.5	—	3.5	V
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D = 0.5A, V_{GS} = 10V$	—	3.6	5.0	Ω
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10V, I_D = 0.5A$	0.4	0.62	—	S
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V,$ $f = 1MHz$	—	150	210	pF
Reverse Transfer Capacitance	C_{rss}		—	15	25	
Output Capacitance	C_{oss}		—	45	70	
Switching Time	Rise Time	 $V_{IN} : t_r, t_f < 5ns, V_{DD} = 200V$ Duty $\leq 1\%, t_w = 10\mu s$	—	15	30	ns
	Turn-on Time		—	40	80	
	Fall Time		—	40	80	
	Turn-off Time		—	135	270	
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q_g	$V_{DD} = 320V, V_{GS} = 10V,$ $I_D = 1A$	—	12	24	nC
Gate-Source Charge	Q_{gs}		—	48	—	
Gate-Drain ("Miller") Charge	Q_{gd}		—	7.2	—	

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

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	1	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	4	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 1A, V_{GS} = 0V$	—	—	-1.7	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 1A, V_{GS} = 0V$	—	300	—	ns
Reverse Recovered Charge	Q_{rr}	$dI_{DR}/dt = 50A/\mu s$	—	0.75	—	μC

