

Field Effect Transistor

Silicon N Channel MOS Type (τ-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
 - $V_{th} = 1.5 \sim 3.5V$ @ $V_{DS} = 10V, I_b = 1mA$

Absolute Maximum Ratings (Ta = 25°C)

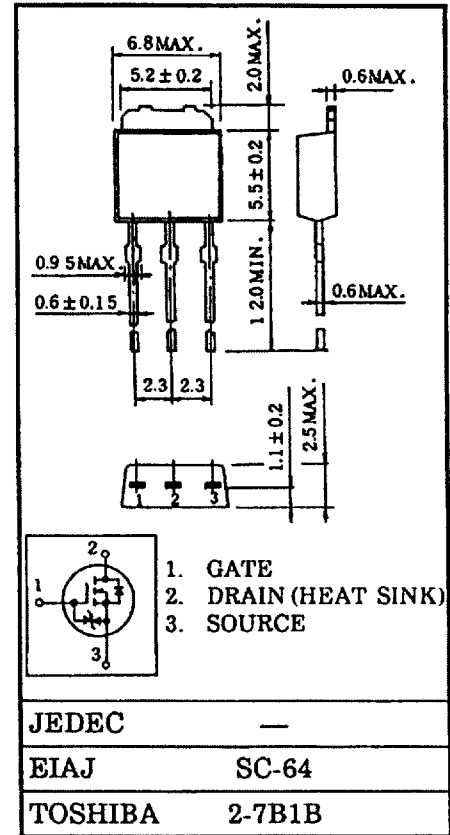
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	400	V
Drain-Gate Voltage ($R_{DS} = 20k\Omega$)	V_{DGR}	400	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	DC	I_b	1
	Pulse	I_{bP}	4
Drain Power Dissipation (Tc = 25°C)	P_D	10	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55 - 150	°C

Thermal Characteristics

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

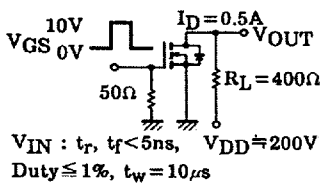
This transistor is an electrostatic sensitive device. Please handle with care.

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	t_r	-	15	30	ns
	Turn-on Time	t_{on}	-	40	80	
	Fall Time	t_f	-	40	80	
	Turn-off Time	t_{off}	-	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

