TOSHIBA FIELD EFFECT TRANSISTOR   SILICON P CHANNEL MOS TYPE (L^2-π-MOSⅣ)

2SJ315

DC-DC CONVERTER

INDUSTRIAL APPLICATIONS
Unit in mm

- 4-Volt Gate Drive

- Low Drain-Source ON Resistance   : $R_{DS(ON)} = 0.25\,\Omega$ (Typ.)

- High Forward Transfer Admittance : $|Y_{fs}| = 3.0S$ (Typ.)

- Low Leakage Current : $I_{DSS} = -100\,\mu A$ (Max.) ($V_{DS} = -60V$)

- Enhancement-Mode   : $V_{th} = -0.8 \sim -2.0V$
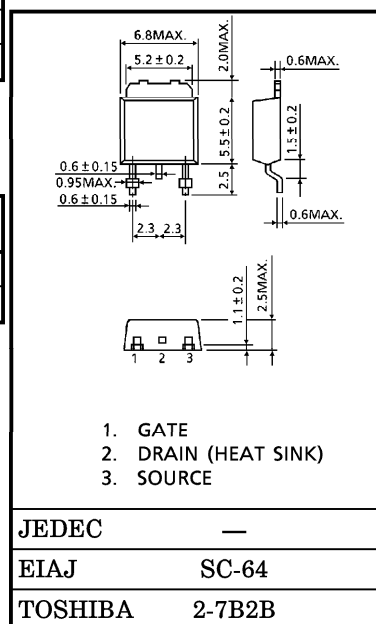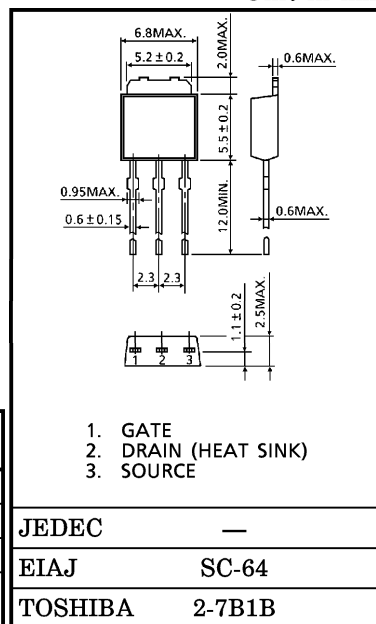 $(V_{DS} = -10V, I_D = -1mA)$

1.   GATE
2.   DRAIN (HEAT SINK)
3.   SOURCE

JEDEC	—
EIAJ	SC-64
TOSHIBA	2-7B1B

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	−60	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)		V_{DGR}	−60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D	−5	A
	Pulse	I_{DP}	−20	
Drain Power Dissipation (Tc = 25°C)		P_D	20	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	$R_{th(ch-c)}$	6.25	°C / W
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	125	°C / W

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

1.   GATE
2.   DRAIN (HEAT SINK)
3.   SOURCE

JEDEC	—
EIAJ	SC-64
TOSHIBA	2-7B2B

Weight : 0.36g

961001EAA2

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS} = 0V$	—	—	± 10	μA
Drain Cut-off Current		I_{DSS}	$V_{DS} = -60V$, $V_{GS} = 0V$	—	—	-100	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = -10mA$, $V_{GS} = 0V$	-60	—	—	V
Gate Threshold Voltage		V_{th}	$V_{DS} = -10V$, $I_D = -1mA$	-0.8	—	-2.0	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = -4V$, $I_D = -2.5A$	—	0.31	0.40	Ω
			$V_{GS} = -10V$, $I_D = -2.5A$	—	0.21	0.25	
Forward Transfer Admittance		$|Y_{fs}|$	$V_{DS} = -10V$, $I_D = -2.5A$	1.8	3.0	—	S
Input Capacitance		C_{iss}	$V_{DS} = -10V$, $V_{GS} = 0V$, f = 1MHz	—	500	—	pF
Reverse Transfer Capacitance		C_{rss}		—	90	—	
Output Capacitance		C_{oss}		—	290	—	
Switching Time	Rise Time	t_r	$I_D = -2.5A$, V_{OUT}, $R_L = 12\Omega$, $V_{DD} = -30V$, V_{IN} : t_r, $t_f < 5ns$, Duty $\leqq 1\%$, $t_w = 10\mu s$	—	20	—	ns
	Turn-on Time	t_{on}		—	30	—	
	Fall Time	t_f		—	30	—	
	Turn-off Time	t_{off}		—	140	—	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} = -48V$, $V_{GS} = -10V$, $I_D = -5A$	—	20	—	nC
Gate-Source Charge		Q_{gs}		—	13	—	
Gate-Drain ("Miller") Charge		Q_{gd}		—	7	—	

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	-5	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	-20	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = -5A$, $V_{GS} = 0V$	—	—	1.5	V

MARKING

J315 ←— TYPE

※ Lot Number
— Month (Starting from Alphabet A)
— Year (Last Number of the Christian Era)