

TOSHIBA FIELD EFFECT TRANSISTOR SILICON P CHANNEL MOS TYPE (L²-π-MOSIV)

2SJ315

DC-DC CONVERTER

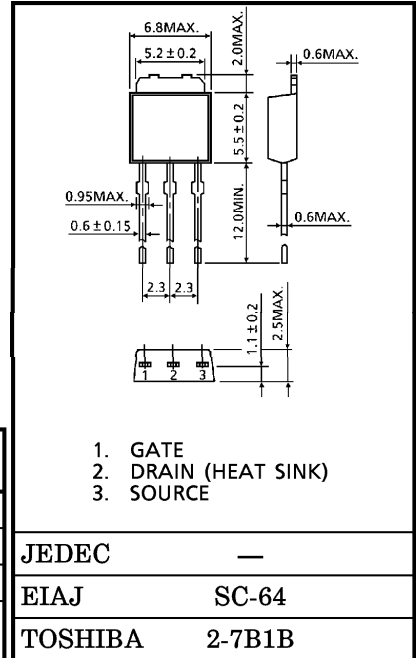
INDUSTRIAL APPLICATIONS

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

MAXIMUM RATINGS (Ta = 25°C)

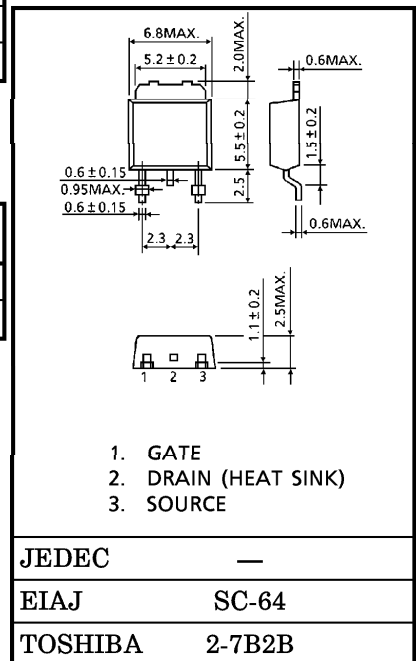
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	-60	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)	V_{DGR}	-60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	DC	I_D	-5
	Pulse	I_{DP}	-20
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	20	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature 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.**



Weight : 0.36g

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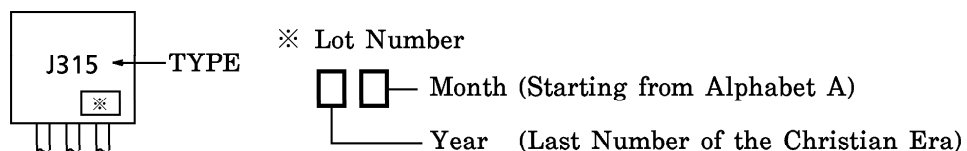
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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		—	20	—	ns
	Turn-on Time	t_{on}		—	30	—	
	Fall Time	t_f		—	30	—	
	Turn-off Time	t_{off}		$V_{IN} : t_r, t_f < 5ns,$ $Duty \leq 1\%, t_w = 10\mu s$	—	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



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