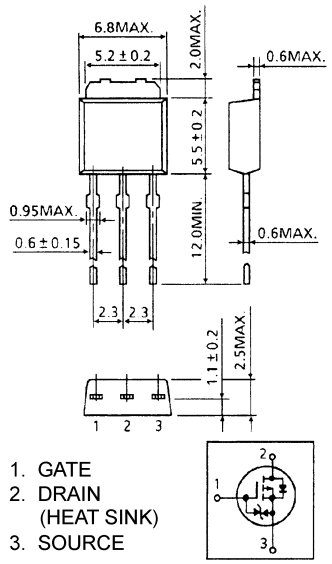
TOSHIBA Field Effect Transistor Silicon P Channel MOS Type (L^2−π−MOSIV)

2SJ315

DC−DC Converter

Unit: mm



JEDEC	—
JEITA	SC-64
TOSHIBA	2-7B1B

Weight: 0.36 g (typ.)

FEATURES

- 4− Volt gate drive
- Low drain−source ON resistance : $R_{DS\ (ON)}$ = 0.25 Ω (typ.)
- High forward transfer admittance : $|Y_{fs}|$ = 3.0 S (typ.)
- Low leakage current : I_{DSS} = −100 μA (max) (V_{DS} = −60 V)
- Enhancement−mode : V_{th} = −0.8~−2.0 V (V_{DS} = −10 V, I_D = −1 mA)

Maximum Ratings (Ta = 25°C)

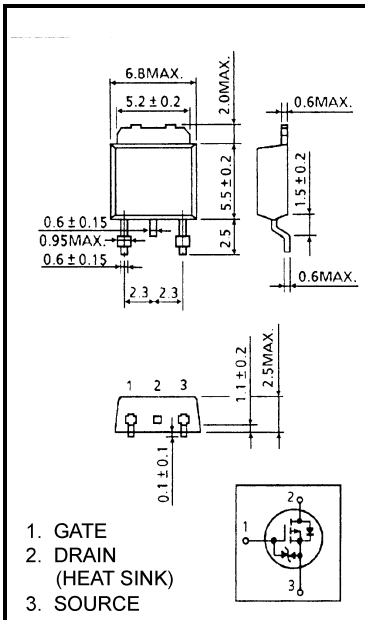
Characteristics		Symbol	Rating	Unit
Drain−source voltage		V_{DSS}	−60	V
Drain−gate voltage (R_{GS} = 20 kΩ)		V_{DGR}	−60	V
Gate−source voltage		V_{GSS}	±20	V
Drain current	DC (Note 1)	I_D	−5	A
	Pulse(Note 1)	I_{DP}	−20	
Drain power dissipation (Tc = 25°C)		P_D	20	W
Channel temperature		T_{ch}	150	°C
Storage temperature range		T_{stg}	−55~150	°C

Thermal Characteristics

Characteristics	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

Note 1: Please use devices on condition that the channel temperature is below 150°C.

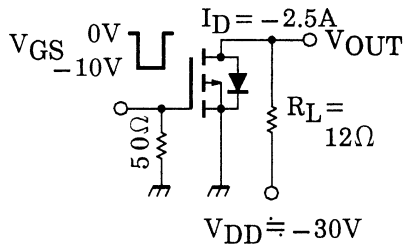
This transistor is an electrostatic sensitive device.
Please handle with caution.



JEDEC	—
JEITA	SC-64
TOSHIBA	2-7B3B

Weight: 0.36 g (typ.)

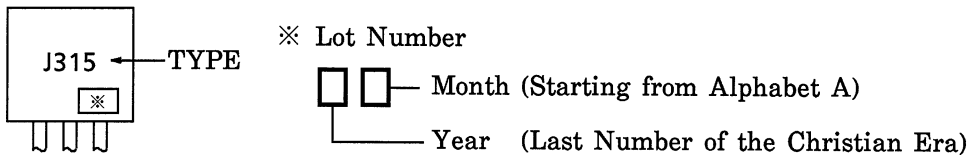
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	V_{GS} = ±16 V, V_{DS} = 0 V	—	—	±10	μA
Drain cut−off current		I_{DSS}	V_{DS} = −60 V, V_{GS} = 0 V	—	—	−100	μA
Drain−source breakdown voltage		$V_{(BR)\ DSS}$	I_D = −10 mA, V_{GS} = 0 V	−60	—	—	V
Gate threshold voltage		V_{th}	V_{DS} = −10 V, I_D = −1 mA	−0.8	—	−2.0	V
Drain−source ON resistance		$R_{DS\ (ON)}$	V_{GS} = −4 V, I_D = −2.5 A	—	0.31	0.40	Ω
			V_{GS} = −10 V, I_D = −2.5 A	—	0.21	0.25	
Forward transfer admittance		$\|Y_{fs}\|$	V_{DS} = −10 V, I_D = −2.5 A	1.8	3.0	—	S
Input capacitance		C_{iss}	V_{DS} = −10 V, V_{GS} = 0 V, f = 1 MHz	—	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}		—	140	—	
Total gate charge (Gate−source plus gate−drain)		Q_g	V_{DD} ≈ −48 V, V_{GS} = −10 V, I_D = −5 A	—	20	—	nC
Gate−source charge		Q_{gs}		—	13	—	
Gate−drain (“miller”) charge		Q_{gd}		—	7	—	

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

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Continuous drain reverse current (Note 1)	I_{DR}	—	—	—	−5	A
Pulse drain reverse current (Note 1)	I_{DRP}	—	—	—	−20	A
Forward voltage (diode)	V_{DSF}	I_{DR} = −5 A, V_{GS} = 0 V	—	—	1.5	V

Marking



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