

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE (π -MOSII ·5)

2SK1119

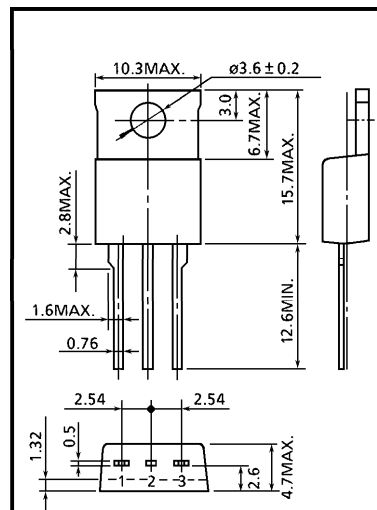
HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS
DC-DC CONVERTER AND MOTOR DRIVE APPLICATIONS

INDUSTRIAL APPLICATIONS
Unit in mm

- Low Drain-Source ON Resistance : $R_{DS(ON)} = 3.0\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 2.0S$ (Typ.)
- Low Leakage Current : $I_{DSS} = 300\mu A$ (Max.) ($V_{DS} = 800V$)
- Enhancement-Mode : $V_{th} = 1.5 \sim 3.5V$ ($V_{DS} = 10V, I_D = 1mA$)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	1000	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)		V_{DGR}	1000	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	DC	I_D	4	A
	Pulse	I_{DP}	12	
Drain Power Dissipation ($T_c = 25^\circ C$)		P_D	100	W
Channel Temperature		T_{ch}	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$



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

JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	2-10P1B

Weight : 2.0g (Typ.)

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	1.25	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	83.3	$^\circ C/W$

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

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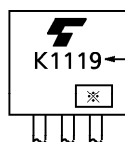
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	—	—	± 100	nA	
Drain Cut-off Current	I_{DSS}	$V_{DS} = 800V, V_{GS} = 0V$	—	—	300	μA	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 10mA, V_{GS} = 0V$	1000	—	—	V	
Gate Threshold Voltage	V_{th}	$V_{DS} = 10V, I_D = 1mA$	1.5	—	3.5	V	
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 2A$	—	3.0	3.8	Ω	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 20V, I_D = 2A$	1.0	2.0	—	S	
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$	—	700	—	pF	
Reverse Transfer Capacitance	C_{rss}		—	55	—		
Output Capacitance	C_{oss}		—	100	—		
Switching Time	Rise Time	t_r		—	18	—	ns
	Turn-on Time	t_{on}		—	30	—	
	Fall Time	t_f		—	12	—	
	Turn-off Time	t_{off}		—	70	—	
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q_g	$V_{DD} = 400V, V_{GS} = 10V, I_D = 6A$	—	60	—	nC	
Gate-Source Charge	Q_{gs}		—	35	—		
Gate-Drain ("Miller") Charge	Q_{gd}		—	25	—		

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	4	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	12	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 4A, V_{GS} = 0V$	—	—	-1.9	V

MARKING



TYPE

※ Lot Number

□ □ — Month (Starting from Alphabet A)

— Year (Last Number of the Christian Era)

