

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE (π -MOSII⁵)

2SK1489

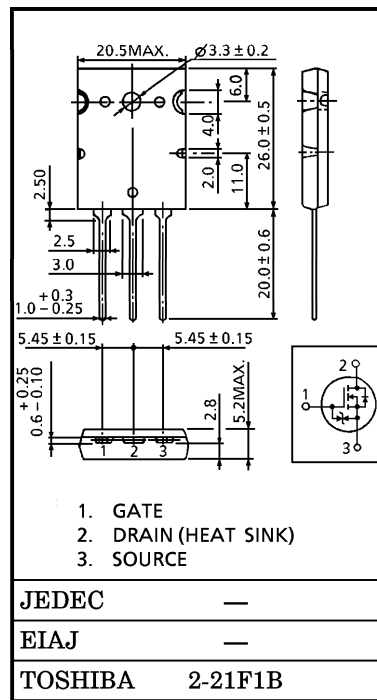
CHOPPER REGULATOR APPLICATIONS
HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS

INDUSTRIAL APPLICATIONS
Unit in mm

- Low Drain-Source ON Resistance : $R_{DS(ON)}=0.8\Omega$ (Typ.)
- High Forward Transfer Admittance: $|Y_{fs}|=6.0S$ (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 ($T_a = 25^\circ C$)

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}	± 30	V
Drain Current	DC	I_D	12
	Pulse	I_{DP}	36
Drain Power Dissipation ($T_c=25^\circ C$)	P_D	200	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55\sim 150$	$^\circ C$



Weight : 9.75g

THERMAL CHARACTERISTICS

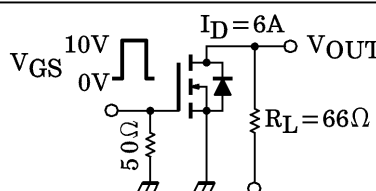
CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	0.625	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	35.7	$^\circ C/W$

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

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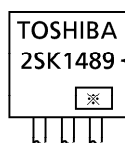
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 25V, V_{DS} = 0V$	—	—	± 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	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 6A$	—	0.8	1.0	Ω	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 20V, I_D = 6A$	4.0	6.0	—	S	
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$	—	2000	—	pF	
Reverse Transfer Capacitance	C_{rss}		—	220	—		
Output Capacitance	C_{oss}		—	360	—		
Switching Time	Rise Time	t_r		—	100	—	ns
	Turn-on Time	t_{on}		—	140	—	
	Fall Time	t_f		—	150	—	
	Turn-off Time	t_{off}		$V_{IN} : t_r, t_f < 5ns,$ $Duty \leq 1\%, t_w = 10\mu s$ $V_{DD} \doteq 400V$	—	500	
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q_g	$V_{DD} \doteq 400V, V_{GS} = 10V,$ $I_D = 12A$	—	110	—	nC	
Gate-Source Charge	Q_{gs}		—	50	—		
Gate-Drain ("Miller") Charge	Q_{gd}		—	60	—		

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	12	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	36	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 12A, V_{GS} = 0V$	—	—	-1.6	V

MARKING



TYPE

※ Lot Number

□ □ — Month (Starting from Alphabet A)

— Year (Last Number of the Christian Era)

