

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

2SK2998

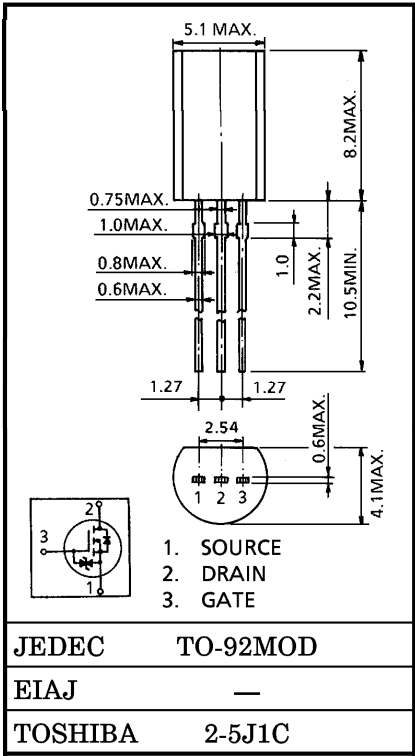
HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS
CHOPPER REGULATOR, DC-DC CONVERTER APPLICATIONS

INDUSTRIAL APPLICATIONS
Unit in mm

- Low Drain-Source ON Resistance : $R_{DS(ON)} = 11.5 \Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 0.4 S$ (Typ.)
- Low Leakage Current : $D_{SS} = 100 \mu A$ (Max.) ($V_{DS} = 500 V$)
- Enhancement-Mode : $V_{th} = 2.0 \sim 4.0 V$
($V_{DS} = 10 V, I_D = 1 mA$)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	500	V
Drain-Gate Voltage ($R_{GS} = 20 k\Omega$)		V_{DGR}	500	V
Gate-Source Voltage		V_{GSS}	± 30	V
Drain Current	DC	I_D	0.5	A
	Pulse	I_{DP}	1.5	A
Drain Power Dissipation (Ta = 25°C)		P_D	0.9	W
Channel Temperature		T_{ch}	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C



Weight : 0.36 g (Typ.)

THERMAL CHARACTERISTICS

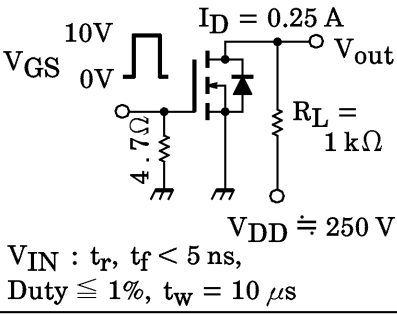
CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	138	°C/W

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

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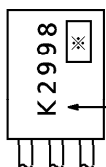
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0 \text{ V}$	—	—	± 10	μA
Gate-Source Breakdown Voltage		$V_{(BR)GSS}$	$I_D = \pm 10 \text{ mA}, V_{GS} = 0 \text{ V}$	± 30	—	—	V
Drain Cut-off Current		I_{DSS}	$V_{DS} = 500 \text{ V}, V_{GS} = 0 \text{ V}$	—	—	100	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = 10 \text{ mA}, V_{GS} = 0 \text{ V}$	500	—	—	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10 \text{ V}, I_D = 1 \text{ mA}$	2.0	—	4.0	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = 10 \text{ V}, I_D = 0.25 \text{ A}$	—	11.5	18	Ω
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 10 \text{ V}, I_D = 0.25 \text{ A}$	0.2	0.4	—	S
Input Capacitance		C_{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0 \text{ V},$ $f = 1 \text{ MHz}$	—	75	—	pF
Reverse Transfer Capacitance		C_{rss}		—	7	—	
Output Capacitance		C_{oss}		—	25	—	
Switching Time	Rise Time	t_r		—	11	—	ns
	Turn-on Time	t_{on}		—	18	—	
	Fall Time	t_f		—	54	—	
	Turn-off Time	t_{off}		—	95	—	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} \doteq 400 \text{ V}, V_{GS} = 10 \text{ V},$ $I_D = 0.5 \text{ A}$	—	3.8	—	nC
Gate-Source Charge		Q_{gs}		—	1.9	—	
Gate-Drain ("Miller") Charge		Q_{gd}		—	1.9	—	

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	0.5	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	1.5	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 0.5 \text{ A}, V_{GS} = 0 \text{ V}$	—	—	—1.7	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 0.5 \text{ A}, V_{GS} = 0 \text{ V}$	—	190	—	ns
Reverse Recovery Charge	Q_{rr}	$dI_{DR} / dt = 100 \text{ A} / \mu\text{s}$	—	380	—	nC

MARKING



TYPE

※ Lot Number



Month (Starting from Alphabet A)

Year (Last Number of the Christian Era)

