

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

2SK2998

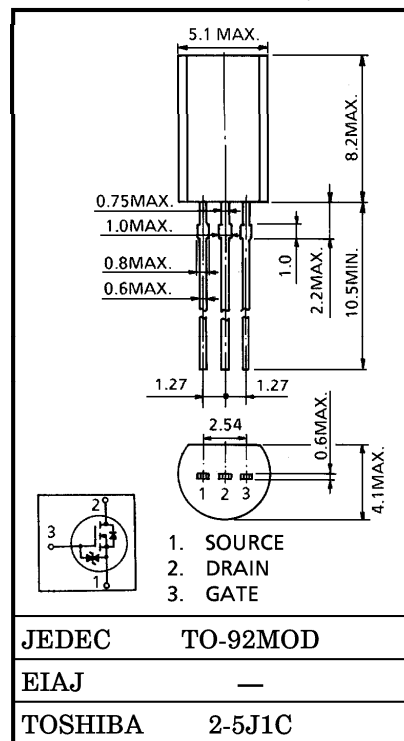
HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS
CHOPPER REGULATOR, DC-DC CONVERTER APPLICATIONS

INDUSTRIAL APPLICATIONS
Unit in mm

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

MAXIMUM RATINGS ($T_a=25^\circ C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	500	V
Drain-Gate Voltage ($R_{GS}=20k\Omega$)		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 ($T_a=25^\circ C$)		P_D	0.9	W
Channel Temperature		T_{ch}	150	$^\circ C$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^\circ C$



Weight : 0.36g (Typ.)

THERMAL CHARACTERISTICS

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

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

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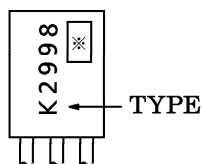
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 25V, V_{DS} = 0V$	—	—	± 10	μA
Gate-Source Breakdown Voltage		$V_{(BR)GSS}$	$I_D = \pm 10mA, V_{GS} = 0V$	± 30	—	—	V
Drain Cut-off Current		I_{DSS}	$V_{DS} = 500V, V_{GS} = 0V$	—	—	100	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = 10mA, V_{GS} = 0V$	500	—	—	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10V, I_D = 1mA$	2.0	—	4.0	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 0.25A$	—	11.5	18	Ω
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 10V, I_D = 0.25A$	0.2	0.4	—	S
Input Capacitance		C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$	—	75	—	pF
Reverse Transfer Capacitance		C_{rss}		—	7	—	
Output Capacitance		C_{oss}		—	25	—	
Switching Time	Rise Time	t_r	<p>$I_D = 0.25A$ $V_{GS} = 10V$ $V_{DS} = 0V$ $R_L = 1k\Omega$ $V_{DD} \doteq 250V$</p>	—	11	—	ns
	Turn-on Time	t_{on}		—	18	—	
	Fall Time	t_f		—	54	—	
	Turn-off Time	t_{off}		$V_{IN} : t_r, t_f < 5ns,$ $Duty \leq 1\%, t_w = 10\mu s$	—	95	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} \doteq 400V, V_{GS} = 10V,$ $I_D = 0.5A$	—	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}	$I_{DR} = 0.5A, V_{GS} = 0V$	—	—	-1.7	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 0.5A, V_{GS} = 0V$	—	190	—	ns
Reverse Recovery Charge	Q_{rr}	$dI_{DR} / dt = 100A / \mu s$	—	380	—	nC

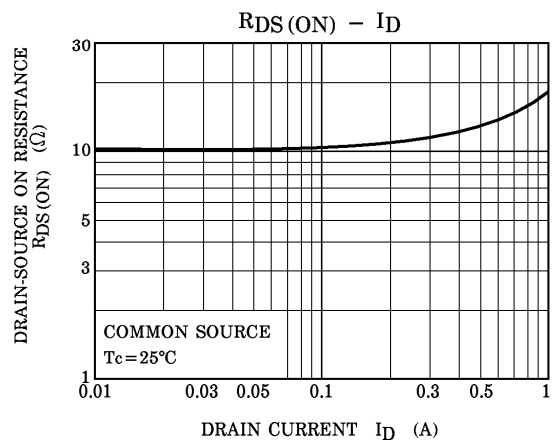
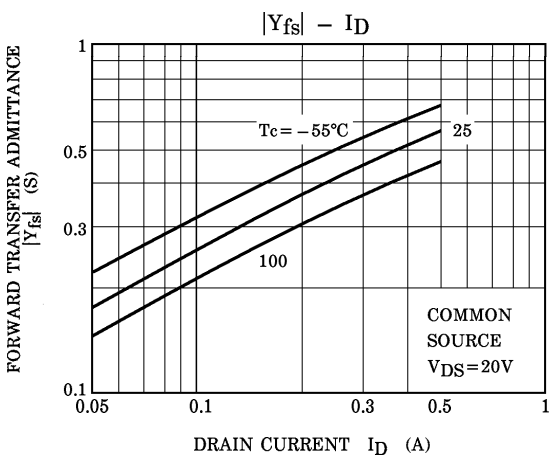
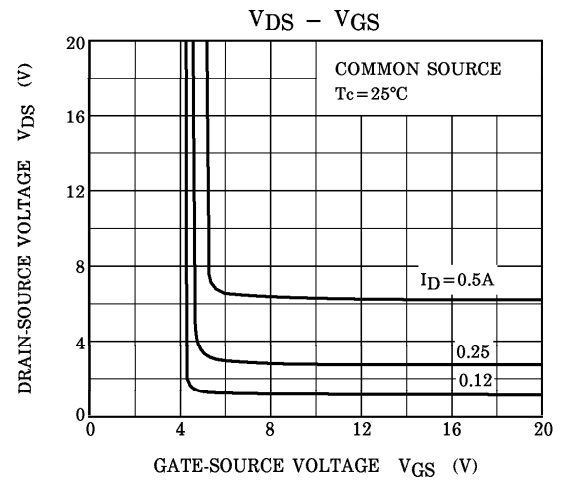
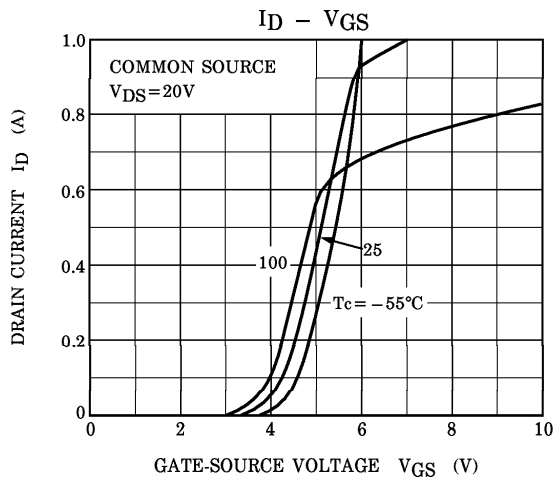
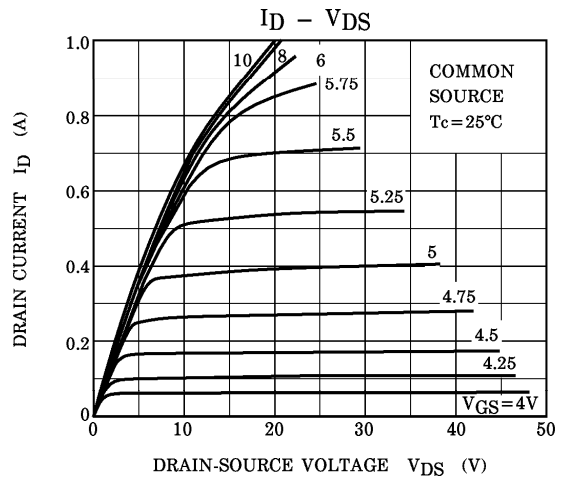
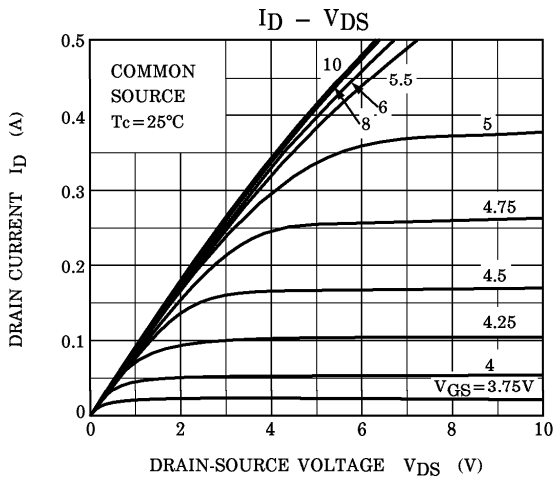
MARKING

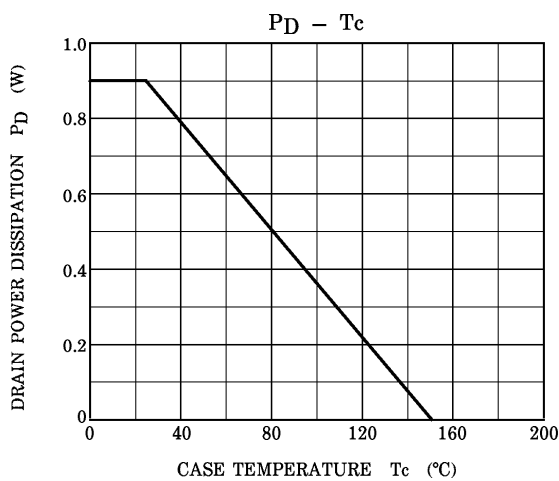
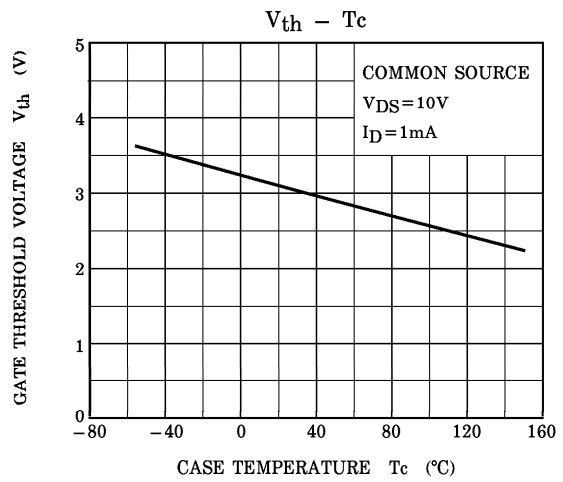
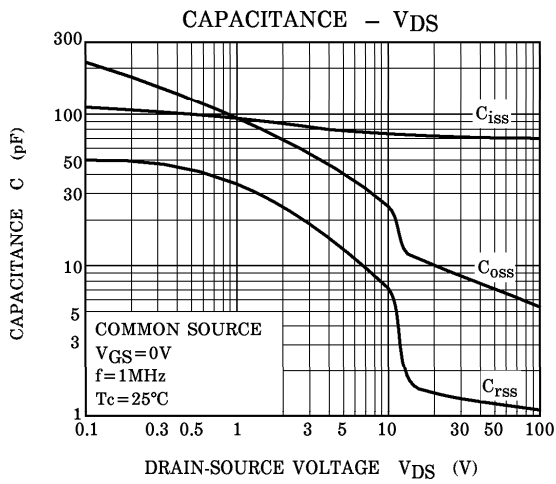
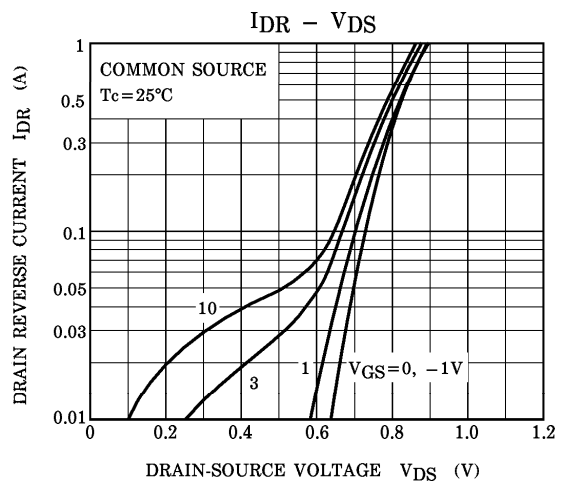
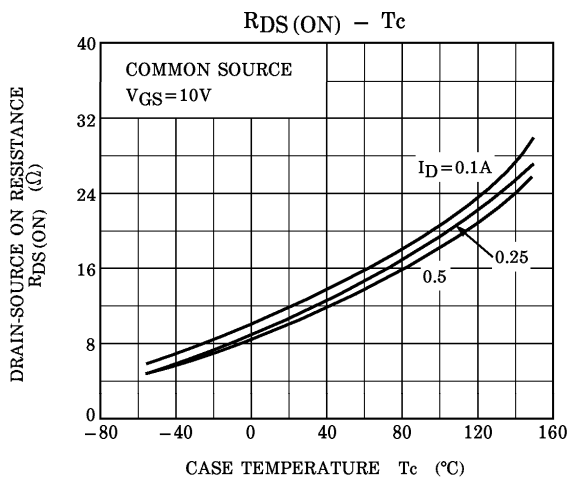


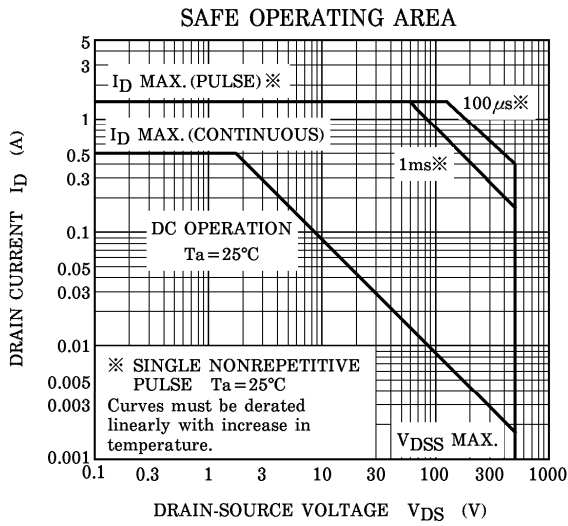
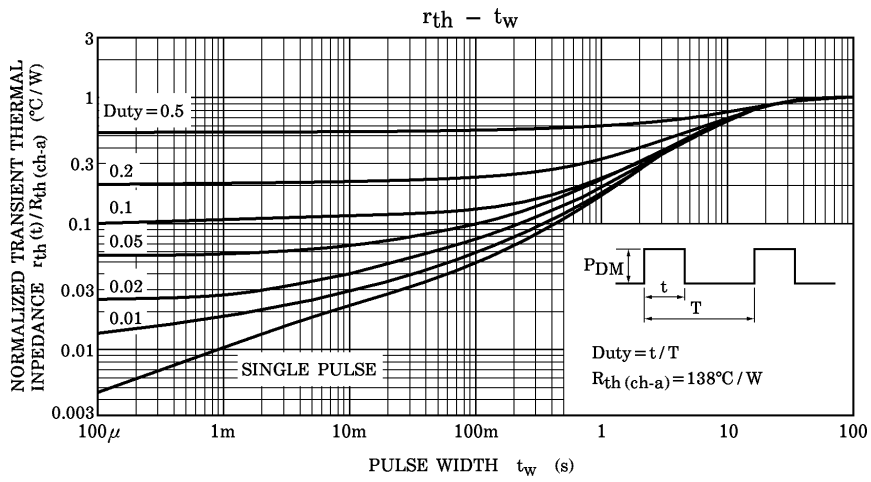
※ Lot Number

□ □ — Month (Starting from Alphabet A)

— Year (Last Number of the Christian Era)







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