

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

2SK2550

HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS

CHOPPER REGULATOR, DC-DC CONVERTER AND MOTOR DRIVE APPLICATIONS

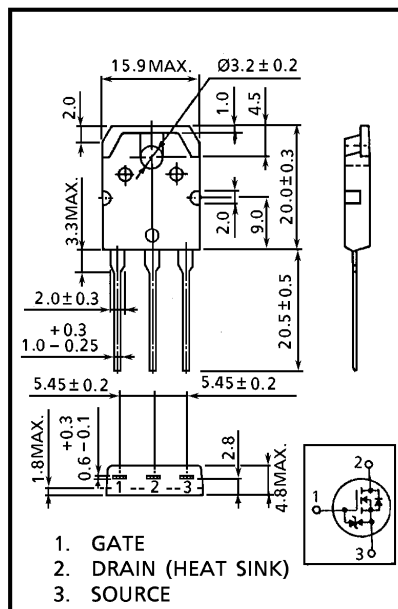
INDUSTRIAL APPLICATIONS

Unit in mm

- Low Drain-Source ON Resistance : $R_{DS(ON)} = 24m\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 27S$ (Typ.)
- Low Leakage Current : $I_{DSS} = 100\mu A$ (Max.) ($V_{DS} = 50V$)
- 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}	50	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)		V_{DGR}	50	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	DC	I_D	45	A
	Pulse	I_{DP}	135	A
Drain Power Dissipation ($T_c = 25^\circ C$)		P_D	100	W
Single Pulse Avalanche Energy**		E_{AS}	115	mJ
Avalanche Current		I_{AR}	45	A
Repetitive Avalanche Energy*		E_{AR}	10	mJ
Channel Temperature		T_{ch}	150	$^\circ C$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ C$



JEDEC	—
EIAJ	SC-65
TOSHIBA	2-16C1B

Weight : 4.6g

HERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	1.25	$^\circ C / W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	50	$^\circ C / W$

Note ;

* Repetitive rating ; Pulse Width Limited by Max. junction temperature.

** $V_{DD} = 25V$, Starting $T_{ch} = 25^\circ C$, $L = 71\mu H$, $R_G = 25\Omega$, $I_{AR} = 45A$

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

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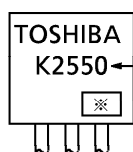
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 16V, V_{DS} = 0V$	—	—	± 10	μA
Drain Cut-off Current		I_{DSS}	$V_{DS} = 50V, V_{GS} = 0V$	—	—	100	μA
Drain-Source Breakdown Voltage		$V(BR)_{DSS}$	$I_D = 10mA, V_{GS} = 0V$	50	—	—	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10V, I_D = 1mA$	1.5	—	3.5	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 25A$	—	24	30	$m\Omega$
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 10V, I_D = 25A$	15	27	—	S
Input Capacitance		C_{iss}	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1MHz$	—	1250	—	pF
Reverse Transfer Capacitance		C_{rss}		—	250	—	
Output Capacitance		C_{oss}		—	700	—	
Switching Time	Rise Time	t_r		—	20	—	ns
	Turn-on Time	t_{on}		—	30	—	
	Fall Time	t_f		—	40	—	
	Turn-off Time	t_{off}		—	120	—	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} = 40V, V_{GS} = 10V$ $I_D = 45A$	—	36	—	nC
Gate-Source Charge		Q_{gs}		—	22	—	
Gate-Drain ("Miller") Charge		Q_{gd}		—	14	—	

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	—	—	—	45	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	135	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 45A, V_{GS} = 0V$	—	—	-1.7	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 45A, V_{GS} = 0V$	—	75	—	ns
Reverse Recovery Charge	Q_{rr}	$dI_{DR} / dt = 50A / \mu s$	—	75	—	nC

MARKING



TYPE ← TOSHIBA K2550
 ※ Lot Number
 □ □ — Month (Starting from Alphabet A)
 — Year (Last Number of the Christian Era)