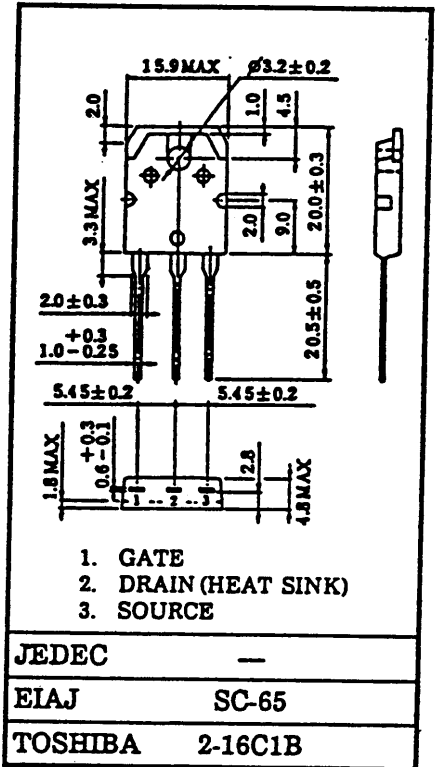


TOSHIBA FIELD EFFECT TRANSISTOR 2SK2150 SILICON N CHANNEL MOS TYPE (π - MOS IV)

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 : $R_{DS(ON)} = 0.29\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 14 S$ (Typ.)
- Low Leakage Current : $I_{DSS} = 100 \mu A$ (Max.) ($V_{DS} = 500V$)
- Enhancement-Mode : $V_{th} = 2.0 \sim 4.0V$ ($V_{DS} = 10V, I_D = 1mA$)



Weight : 4.6g

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	15 A
	Pulse	I_{DP}	60 A
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	150	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$

THERMAL CHARACTERISTICS

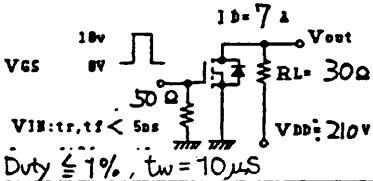
CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel To Case	$R_{th(ch-c)}$	0.833	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	50	$^\circ C/W$

THIS TRANSISTOR IS AN ELECTROSTATIC SENSITIVE DEVICE. PLEASE HANDLE WITH CAUTION.

⊙ The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patents or other rights of TOSHIBA or others.

TOSHIBA CORPORATION

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		IGSS	VGS= ±25V, VDS= 0V	—	—	±10	μA
Gate-Source Breakdown Voltage		V(BR)GSS	IG= ±100μA, VDS= 0V	±30	—	—	
Drain Cut-off Current		IDSS	VDS= 500V, VGS= 0V	—	—	100	μA
Drain-Source Breakdown Voltage		V(BR)DSS	ID= 10mA, VGS= 0V	500	—	—	V
Gate Threshold Voltage		Vth	VDS= 10V, ID= 1mA	2.0	—	4.0	V
Drain-Source ON Resistance		RDS(ON)	VGS= 10V, ID= 7A	—	0.29	0.40	Ω
Forward Transfer Admittance		Yfs	VDS= 10V, ID= 7A	—	14	—	S
Input Capacitance		Ciss	VDS= 10V, VGS= 0V f= 1MHz	—	2350	—	pF
Reverse Transfer Capacitance		Crss		—	200	—	
Output Capacitance		Coss		—	730	—	
Switching Time	Rise Time	tr		—	20	—	nS
	Turn-on Time	ton		—	55	—	
	Fall Time	tf		—	40	—	
	Turn-off Time	toff		—	235	—	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Qg	VDD= 400V, VGS= 10V ID= 15A	—	50	—	nC
Gate-Source Charge		Qgs		—	30	—	
Gate-Drain ("Miller") Charge		Qgd		—	20	—	

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	IDR	—	—	—	15	A
Pulse Drain Reverse Current	IDRP	—	—	—	60	A
Diode Forward Voltage	VDSF	IDR= 15A, VGS= 0V	—	—	-1.7	V
Reverse Recovery Time	trr	IDR= 15A, VGS= 0V dIDR/dt= 100A/μS	—	490	—	nS
Reverse Recovery Charge	Qrr		—	5.4	—	μC

