

YTF630

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

HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS.
CHOPPER REGULATOR, DC-DC CONVERTER AND MOTOR
DRIVE APPLICATIONS.

INDUSTRIAL APPLICATIONS

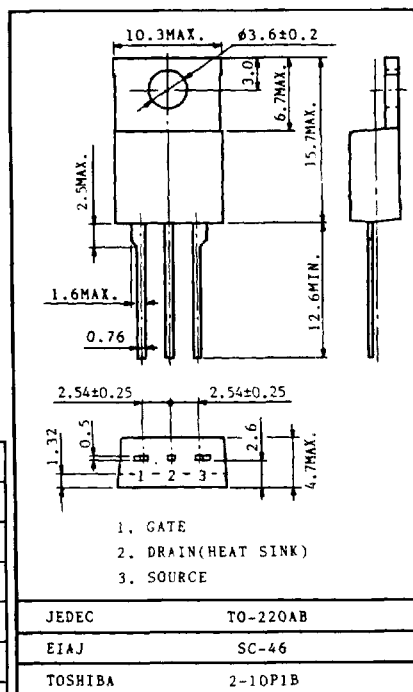
Unit in mm

FEATURES:

- Low Drain-Source ON Resistance : $R_{DS(ON)}=0.25 \Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}|=4.0S$ (Typ.)
- Low Leakage Current : $[I_{DSS}=250 \mu A(\text{Max.}) @ V_{DS}=200V$
- Enhancement-Mode : $V_{th}=2.0\sim 4.0V @ V_{DS}=10V, I_D=250 \mu A$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	200	V
Drain-Gate Voltage ($R_{GS}=20k\Omega$)		V_{DGR}	200	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	DC	I_D	9	A
	Pulse	I_{DP}	36	A
Drain Power Dissipation ($T_c=25^\circ C$)		P_D	75	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	$R_{th(ch-c)}$	1.67	$^\circ C/W$
Thermal Resistance, Channel To Ambient	$R_{th(ch-a)}$	80	$^\circ C/W$
Maximum Lead Temperature for Soldering Purposes (1.6mm from case for 10 seconds)	T_L	300	$^\circ C$

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

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	—	—	±100	nA	
Drain Cut-off Current	I _{DSS}	V _{DS} =200V, V _{GS} =0V	—	—	250	μA	
Drain-Source Breakdown Voltage	V(BR)DSS	I _D = 250 μA, V _{GS} =0V	200	—	—	V	
Gate Threshold Voltage	V _{th}	V _{DS} =10V, I _D = 250 μA	2.0	—	4.0	V	
Drain-Source ON Resistance	R _{DS(ON)}	I _D =5A, V _{GS} =10V	—	0.25	0.40	Ω	
Forward Transfer Admittance	Y _{fs}	V _{DS} =10V, I _D =5A	3.0	4.0	—	S	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	—	580	800	pF	
Reverse Transfer Capacitance	C _{rss}		—	70	150		
Output Capacitance	C _{oss}		—	220	450		
Switching Time	Rise Time	t _r		—	18	50	ns
	Turn-on Time	t _{on}		—	32	80	
	Fall Time	t _f		—	16	40	
	Turn-off Time	t _{off}		—	50	90	
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	V _{DD} ≈ 160V, V _{GS} =10V, I _D =12A	—	22	30	nC	
Gate-Source Charge	Q _{gs}		—	9	—		
Gate-Drain(" Miller")Charge	Q _{gd}		—	13	—		

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I _{DR}	----	—	—	9	A
Pulse Drain Reverse Current	I _{DRP}	----	—	—	36	A
Diode Forward Voltage	V _{DSF}	I _{DR} =9A, V _{GS} =0V	—	—	-2.0	V
Reverse Recovery Time	t _{rr}	I _{DR} =9A, V _{GS} =0V	—	200	—	ns
Reverse Recovered Charge	Q _{rr}	d I _{DR} /dt =100A/μs	—	0.7	—	μC