FIELD EFFECT TRANSISTOR

SILICON N CHANNEL MOS TYPE (L^2-π-MOSIII)

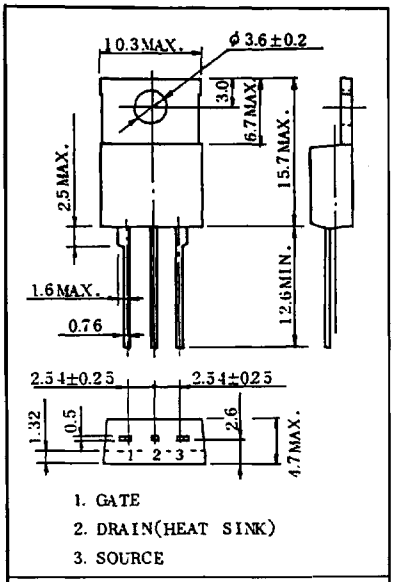
2SK1115

HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS.

DC-DC CONVERTER, RELAY DRIVE AND MOTOR DRIVE APPLICATIONS.

INDUSTRIAL APPLICATIONS

Unit in mm



JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	2-10P1B

Weight: 2.0g

FEATURES:

- 4-Volt Gate Drive
- Low Drain-Source ON Resistance : $R_{DS(ON)}$=0.042Ω (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}|$=11S(Typ.)
- Low Leakage Current : I_{DSS}= 100μA (Max.) @ V_{DS}=60V
- Enhancement-Mode : V_{th}= 0.8~2.0V @ V_{DS}=10V, I_D=1mA

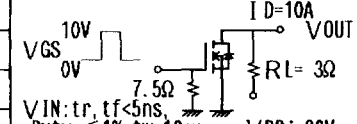
MAXIMUM RATINGS (Ta =25 ℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	60	V
Drain-Gate Voltage (R_{GS}=20kΩ)		V_{DGR}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D	20	A
	Pulse	I_{DP}	80	A
Drain Power Dissipation (Tc=25℃)		P_D	60	W
Channel Temperature		Tch	150	℃
Storage Temperature Range		Tstg	-55~150	℃

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	2.08	℃/W
Thermal Resistance, Channel To Ambient	$R_{th(ch-a)}$	83.3	℃/W

ELECTRICAL CHARACTERISTICS (Ta=25 ℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		IGSS	VGS= ±20V, VDS=0V	—	—	±100	nA
Drain Cut-off Currnet		IDSS	VDS= 60V, VGS=0V	—	—	100	μA
Drain-Source Breakdown Voltage		V(BR)DSS	ID=10mA, VGS=0V	60	—	—	V
Gate Threshold Voltage		Vth	VDS=10V, ID=1mA	0.8	—	2.0	V
ON State Drain Current		ID(ON)	VDS= 4V, VGS= 4V	10	—	—	A
Drain-Source ON Resistance		RDS(ON)	VGS= 4V, ID=5A	—	0.064	0.090	Ω
			VGS=10V, ID=10A	—	0.042	0.055	
Forward Transfer Admittance		|Yfs|	VDS=10V, ID=10A	6.0	11	—	S
Input Capacitance		Ciss	VDS=10V, VGS=0V, f=1MHz	—	1150	1600	pF
Reverse Transfer Capacitance		Crss		—	280	420	
Output Capacitance		Coss		—	780	1100	
Switching Time	Rise Time	tr		—	18	35	ns
	Turn-on Time	ton		—	30	60	
	Fall Time	tf		—	30	60	
	Turn-off Time	toff		—	110	220	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Qg	VDD≒48V, VGS=10V, ID=20A	—	54	100	nC
Gate-Source Charge		Qgs		—	34	—	
Gate-Drain(" Miller")Charge		Qgd		—	20	—	

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	IDR	———	—	—	20	A
Pulse Drain Reverse Current	IDRP	———	—	—	80	A
Diode Forward Voltage	VDSF	IDR =20A, VGS=0V	—	-1.1	-1.8	V
Reverse Recovery Time	trr	IDR =20A, VGS=0V	—	130	—	ns
Reverse Recovered Charge	Qrr	dIDR/dt = 50A/μs	—	0.26	—	μC