

Field Effect Transistor

Silicon N Channel MOS Type (π -MOS II.5)

High Speed, High Current DC-DC Converter,

Relay Drive and Motor Drive Applications

Features

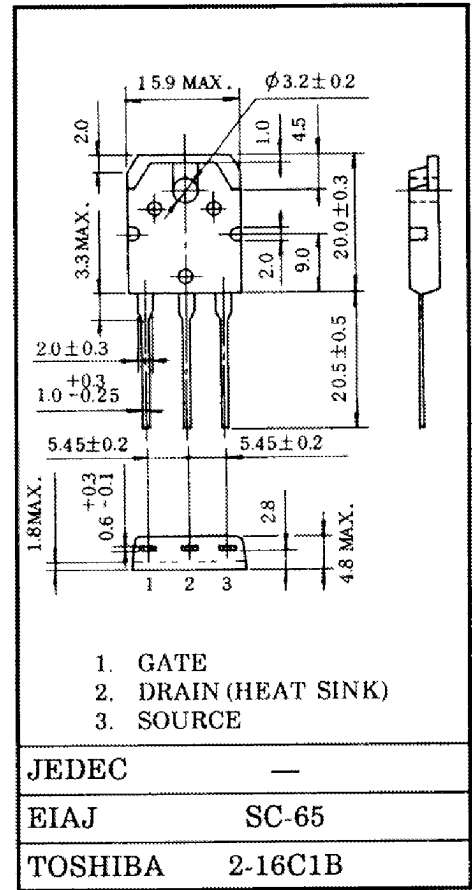
- Low Drain-Source ON Resistance
 - $R_{DS(ON)} = 1.1\Omega$ (Typ.)
- High Forward Transfer Admittance
 - $|Y_{fs}| = 4.0S$ (Typ.)
- Low Leakage Current
 - $I_{DSS} = 300\mu A$ (Max.) @ $V_{DS} = 720V$
- Enhancement-Mode
 - $V_{th} = 1.5 \sim 3.5V$ @ $V_{DS} = 10V, I_D = 1mA$

Absolute Maximum Ratings ($T_a = 25^{\circ}C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	900	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)		V_{DGR}	900	V
Gate-Source Voltage		V_{GSS}	± 30	V
Drain Current	DC	I_D	9	A
	Pulse	I_{DP}	27	
Drain Power Dissipation ($T_c = 25^{\circ}C$)		P_D	150	W
Channel Temperature		T_{ch}	150	$^{\circ}C$
Storage Temperature Range		T_{slg}	$-55 \sim 150$	$^{\circ}C$

Industrial Applications

Unit in mm



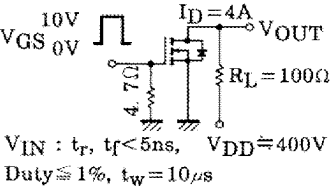
Weight : 4.6g

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 care.

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 25V, V_{DS} = 0V$	—	—	± 100	nA
Drain Cut-off Current		I_{DSS}	$V_{DS} = 720V, V_{GS} = 0V$	—	—	300	μA
Drain-Source Breakdown Voltage		$V_{(BR) DSS}$	$I_D = 10mA, V_{GS} = 0V$	900	—	—	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10V, I_D = 1mA$	1.5	—	3.5	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$I_D = 4A, V_{GS} = 10V$	—	1.1	1.4	Ω
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 20V, I_D = 4A$	2.0	4.0	—	S
Input Capacitance		C_{iss}	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$	—	1300	1800	pF
Reverse Transfer Capacitance		C_{rss}		—	100	150	
Output Capacitance		C_{oss}		—	180	260	
Switching Time	Rise Time	t_r	 $V_{GS} = 10V, 0V$ $I_D = 4A$ $R_L = 100\Omega$ $V_{IN} : t_r, t_f < 5ns, V_{DD} \approx 400V$ Duty $\approx 1\%, t_w = 10\mu s$	—	25	50	ns
	Turn-on Time	t_{on}		—	40	80	
	Fall Time	t_f		—	20	40	
	Turn-off Time	t_{off}		—	100	200	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} = 400V, V_{GS} = 10V,$ $I_D = 9A$	—	120	240	nC
Gate-Source Charge		Q_{gs}		—	70	—	
Gate-Drain ("Miller") Charge		Q_{gd}		—	50	—	

Source-Drain Diode Ratings and Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Continuous Drain Reverse Current	I_{DR}	—	—	—	9	A
Pulse Drain Reverse Current	I_{DRP}	—	—	—	27	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 9A, V_{GS} = 0V$	—	—	-2.0	V

