

Silicon N Channel MOS Type (τ - MOS IV)

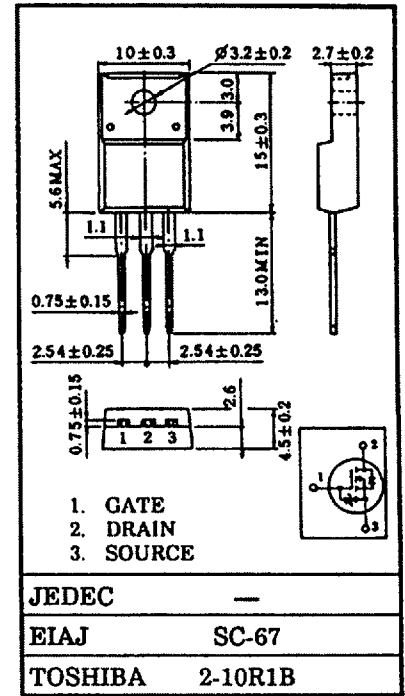
High Speed, High Current Switching Applications.
Chopper Regulator, DC-DC Converter and Motor Drive Applications.

- Low Drain-Source ON Resistance: $R_{DS(ON)} = 0.6\Omega$ (Typ.)
- High Forward Transfer Admittance: $|Y_{fs}| = 5.5S$ (Typ.)
- Low Leakage Current: $I_{DSS} = 100\mu A$ (Max.) ($V_{DS} = 500V$)
- Enhancement Mode: $V_{th} = 2.0 \sim 4.0V$ ($V_{DS} = 10V, I_D = 1\text{ mA}$)

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

Characteristic	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DSS}	500	V	
Drain-Gate Voltage ($R_{GS} = 20\text{ k}\Omega$)	V_{DGR}	500	V	
Gate-Source Voltage	V_{GSS}	± 30	V	
Drain Current	DC	I_D	7	A
	Pulse	I_{DP}	28	A
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	45	W	
Channel Temperature	T_{ch}	150	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ C$	



Weight : 1.9g

Thermal Characteristics

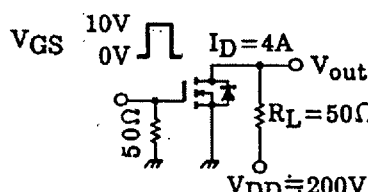
Characteristic	Symbol	Max.	Unit
Thermal Resistance, Channel to Case	$R_{th(ch-c)}$	2.77	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	62.5	$^\circ C/W$

This transistor is an electrostatic sensitive device.
Please Handle With Caution.

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Electrical Characteristics ($T_J = 25^\circ\text{C}$)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Gate Leakage Current		I_{GSS}	$V_{GS} = \pm 25\text{V}, V_{DS} = 0\text{V}$	-	-	± 10	μA
Gate-Source Breakdown Voltage		$V_{(BR)GSS}$	$I_G = \pm 100\ \mu\text{A}, V_{DS} = 0\text{V}$	± 30	-	-	V
Drain Cut-Off Current		I_{DSS}	$V_{DS} = 500\text{V}, V_{GS} = 0\text{V}$	-	-	100	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D = 10\ \text{mA}, V_{GS} = 0\text{V}$	500	-	-	V
Gate Threshold Voltage		V_{th}	$V_{DS} = 10\text{V}, I_D = 1\ \text{mA}$	2.0	-	4.0	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS} = 10\text{V}, I_D = 4\text{A}$	-	0.6	0.8	Ω
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS} = 10\text{V}, I_D = 4\text{A}$	3.0	5.5	-	S
Input Capacitance		C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}$ $f = 1\ \text{MHz}$	-	1300	-	pF
Reverse Transfer Capacitance		C_{rss}		-	80	-	
Output Capacitance		C_{oss}		-	360	-	
Switching Timing	Rise Time	t_r		 $V_{IN} : t_r, t_f < 5\text{ns}$ Duty $\leq 1\%$, $t_w = 10\ \mu\text{s}$	-	20	-
	Turn-on Time	t_{on}	-		50	-	
	Fall Time	t_f	-		30	-	
	Turn-off Time	t_{off}	-		125	-	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD} = 400\text{V}, V_{GS} = 10\text{V}$ $I_D = 7\text{A}$	-	30	-	nC
Gate-Source Charge		Q_{gs}		-	18	-	
Gate-Drain ("Miller") Charge		Q_{gd}		-	12	-	

Source-Drain Diode Ratings and Characteristics ($T_J = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Continuous Drain Reverse Current	I_{DR}	-	-	-	7	A
Pulse Drain Reverse Current	I_{DRP}	-	-	-	28	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 7\text{A}, V_{GS} = 0\text{V}$	-	-	-1.7	V
Reverse Recovery Time	t_r	$I_{DR} = 7\text{A}, V_{GS} = 0\text{V}$	-	450	-	ns
Reverse Recovery Charge	Q_r	$dI_{DR} / dt = 100\text{A} / \mu\text{s}$	-	4.0	-	μC

