

(2SK2662)

HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS
 DC-DC CONVERTER, RELAY DRIVE AND MOTOR DRIVE APPLICATIONS

- Low Drain-Source ON Resistance : $R_{DS(ON)} = 1.35\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 4.0S$ (Typ.)
- Low Leakage Current : $I_{DSS} = 100\mu A$ (Max.) ($V_{DS} = 500V$)
- Enhancement-Mode : $V_{th} = 2.0 \sim 4.0V$ ($V_{DS} = 10V, I_D = 1mA$)

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	5 A
	Pulse	I_{DP}	20 A
Drain Power Dissipation ($T_c = 25^\circ C$)	P_D	35	W
Single Pulse Avalanche Energy**	E_{AS}	180	mJ
Avalanche Current	I_{AR}	5	A
Repetitive Avalanche Energy*	E_{AR}	3.5	mJ
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	$R_{th(ch-c)}$	3.57	$^\circ C/W$
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	62.5	$^\circ C/W$

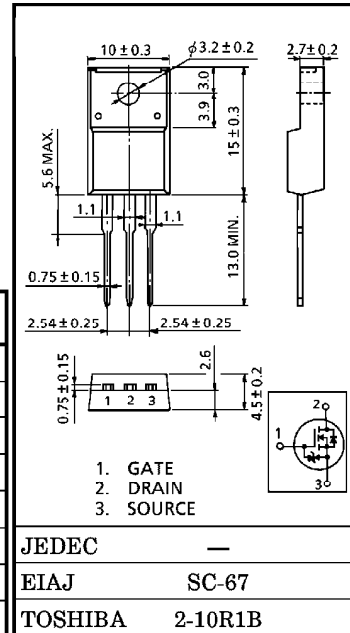
Note ;

* Repetitive rating ; Pulse Width Limited by Max. junction temperature.

** $V_{DD} = 90V, T_{ch} = 25^\circ C, L = 12.2mH, I_{AR} = 5A$

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

INDUSTRIAL APPLICATIONS
 Unit in mm



Weight : 1.9g

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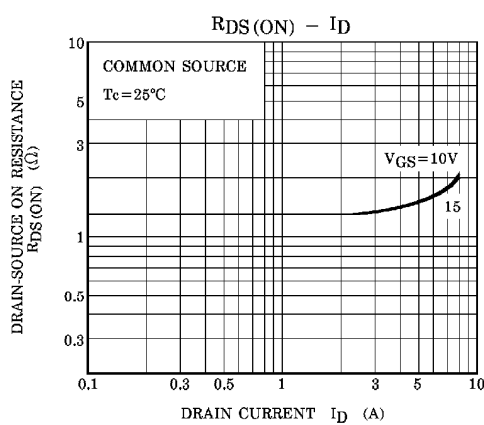
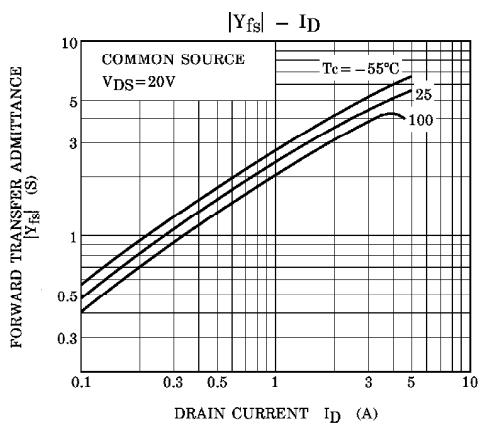
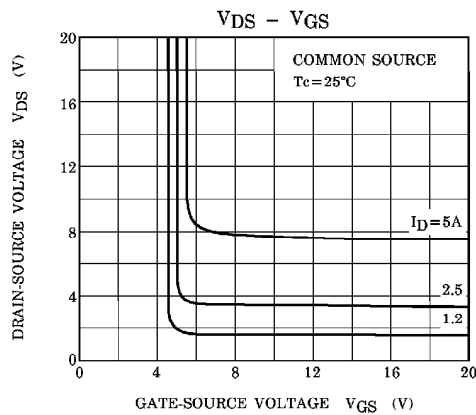
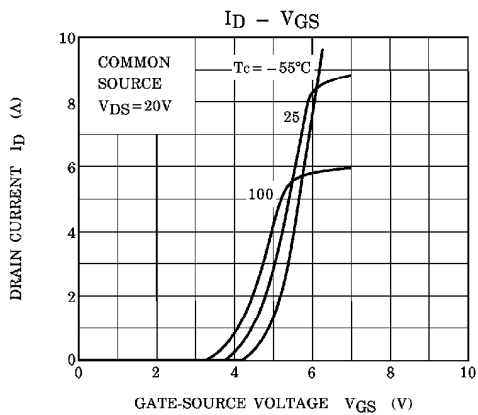
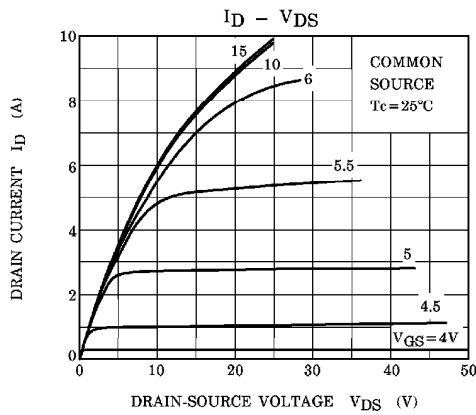
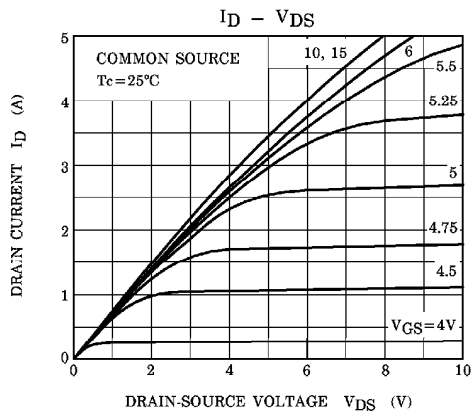
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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 = ±10μA, VDS = 0V	±30	—	—	V
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 = 2.5A	—	1.35	1.50	Ω
Forward Transfer Admittance		Yfs	VDS = 10V, ID = 2.5A	2.5	4.0	—	S
Input Capacitance		Ciss	VDS = 10V, VGS = 0V, f = 1MHz	—	780	—	pF
Reverse Transfer Capacitance		Crss		—	60	—	
Output Capacitance		Coss		—	200	—	
Switching Time	Rise Time	tr		—	12	—	ns
	Turn-on Time	ton		—	25	—	
	Fall Time	tf		—	15	—	
	Turn-off Time	toff		VIN : tr, tf < 5ns, Duty ≤ 1%, tw = 10μs	—	60	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Qg	VDD ≈ 400V, VGS = 10V, ID = 5A	—	17	—	nC
Gate-Source Charge		Qgs		—	11	—	
Gate-Drain ("Miller") Charge		Qgd		—	6	—	

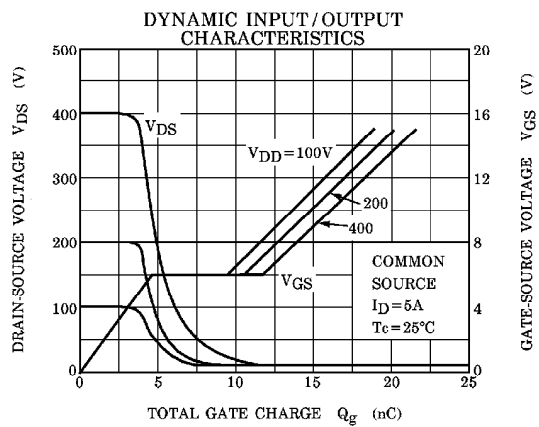
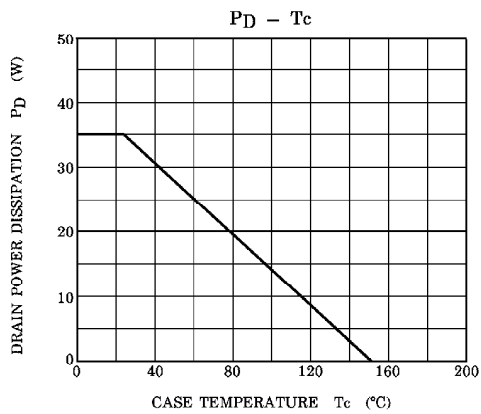
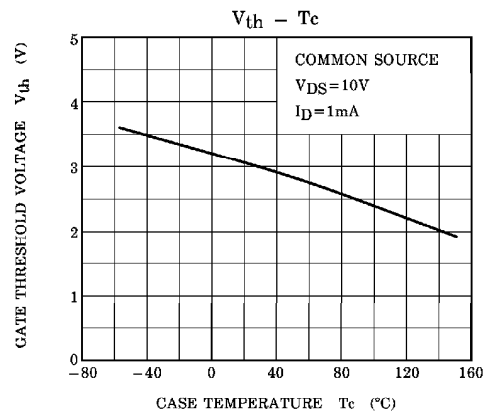
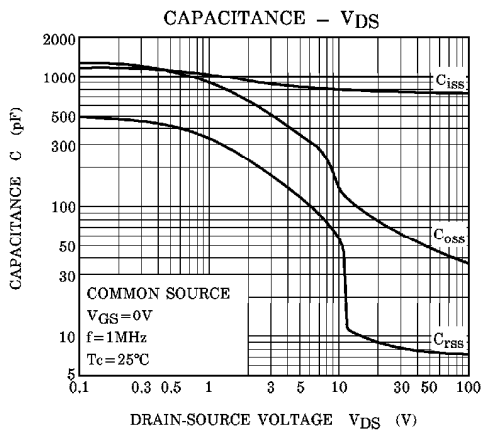
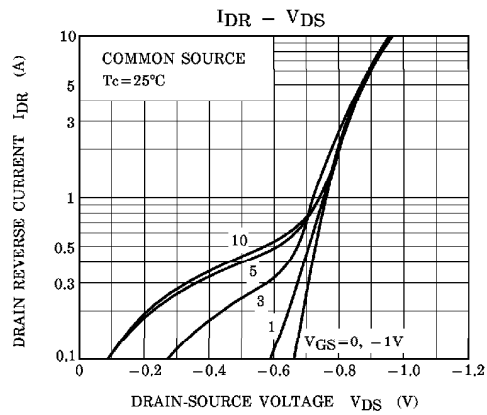
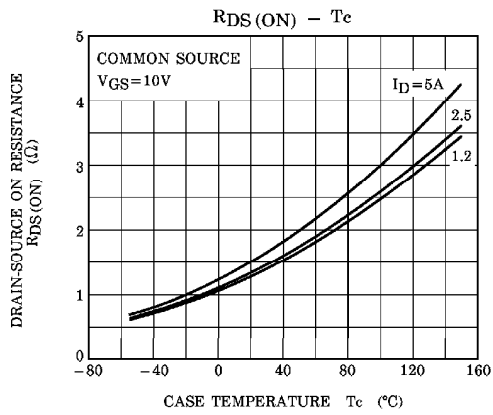
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	IDR	—	—	—	5	A
Pulse Drain Reverse Current	IDRP	—	—	—	20	A
Diode Forward Voltage	VDSF	IDR = 5A, VGS = 0V	—	—	-1.7	V
Reverse Recovery Time	trr	IDR = 5A, VGS = 0V	—	1400	—	ns
Reverse Recovery Charge	Qrr	dIDR / dt = 100A / μs	—	9	—	μC

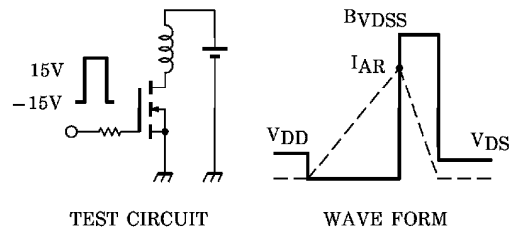
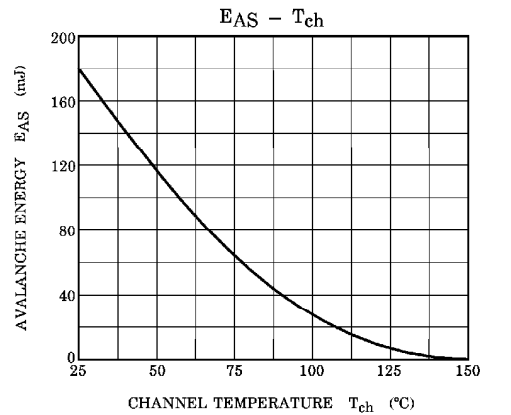
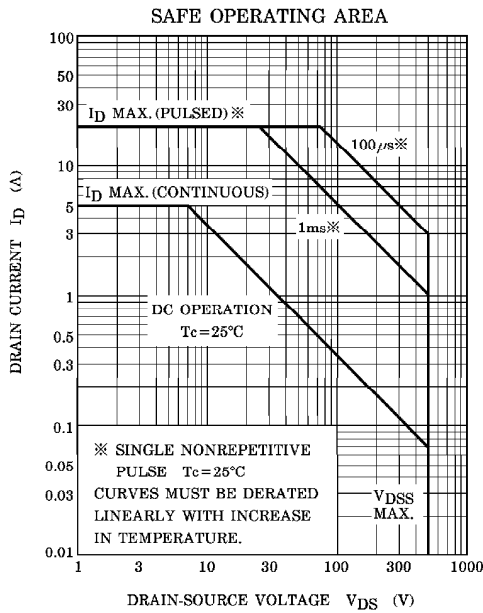
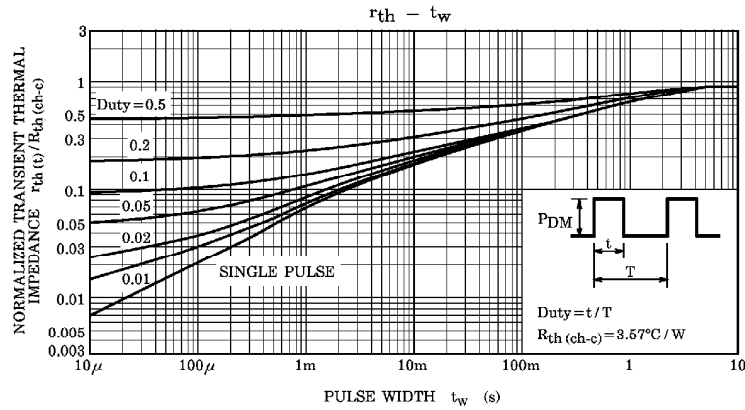
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Peak $I_{AR} = 5A$, $R_G = 25\Omega$, $V_{DD} = 90V$, $L = 12.2mH$

$$E_{AS} = \frac{1}{2} \cdot L \cdot I^2 \cdot \left(\frac{BVDSS}{BVDSS - V_{DD}} \right)$$