



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR

2SK357

SILICON N CHANNEL MOS TYPE
(π -MOS)

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

FEATURES:

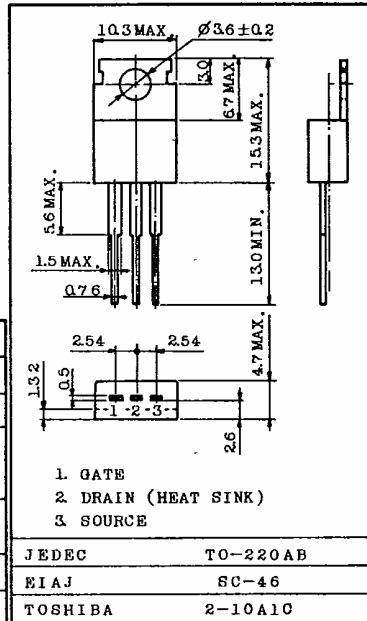
- Low Drain-Source ON Resistance : $R_{DS(ON)}=0.6\Omega$ (Typ.)
- High Forward Transfer Admittance: $|Y_{fs}|=1.8S$ (Typ.)
- High Drain Current : $I_{DP}=8A$ (Max.)
- Low Leakage Current: $I_{GSS}=\pm 100nA$ (Max.) @ $V_{GS}=\pm 20V$
 $I_{DSS}=1mA$ (Max.) @ $V_{DS}=150V$
- Enhancement-Mode : $V_{th}=1.5\sim 3.5V$ @ $I_D=1mA$

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSX}	150	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	DC	I_D	5
	Pulse	I_{DP}	8
Drain Power Dissipation (Tc=25°C)	P_D	40	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C

INDUSTRIAL APPLICATIONS

Unit in mm



Weight : 1.9g

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT		
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0$	-	-	± 100	nA		
Drain Cut-off Current	I_{DSS}	$V_{DS}=150V, V_{GS}=0$	-	-	1.0	mA		
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10mA, V_{GS}=0$	150	-	-	V		
Gate Threshold Voltage	V_{th}	$V_{DS}=10V, I_D=1mA$	1.5	-	3.5	V		
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=3A$	0.8	1.8	-	S		
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D=3A, V_{GS}=10V$	-	0.6	0.9	Ω		
Drain-Source ON Voltage	$V_{DS(ON)}$	$I_D=8A, V_{GS}=10V$	-	5.5	9.5	V		
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	260	350	pF		
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	50	100	pF		
Output Capacitance	C_{oss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	160	250	pF		
Switching Time	Rise Time	t_r			-	30	60	ns
	Turn-on Time	t_{on}			-	40	80	
	Fall Time	t_f			-	20	50	
	Turn-off Time	t_{off}	$V_{IN}; t_r, t_f < 5ns$ $D, U \leq 1\% (Z_{out}=50\Omega)$		-	60	120	

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

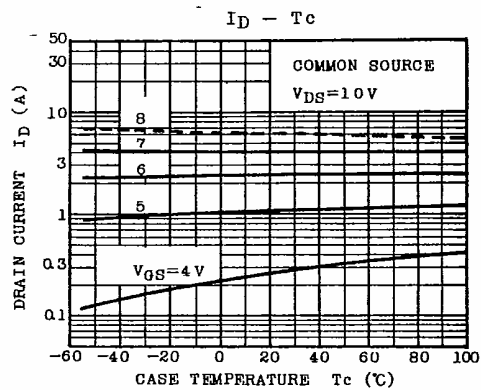
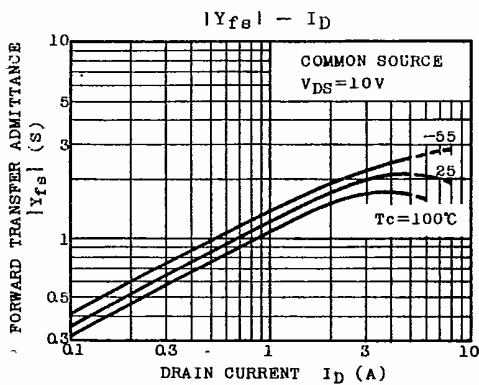
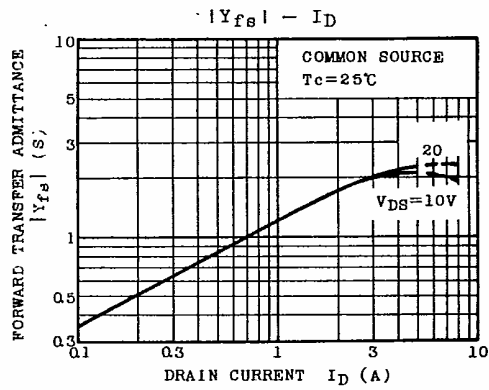
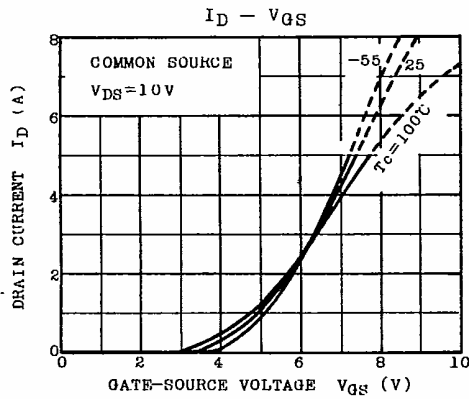
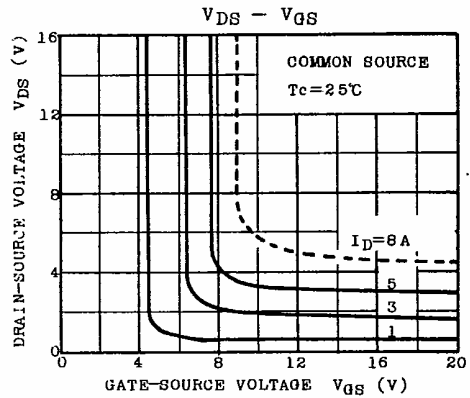
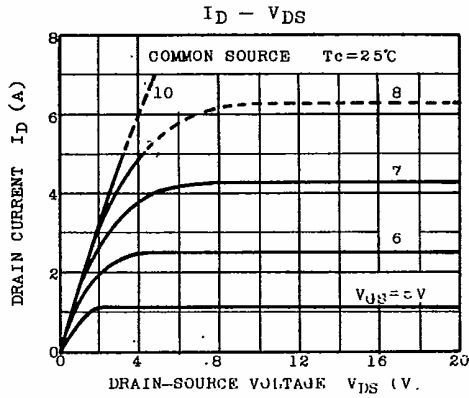
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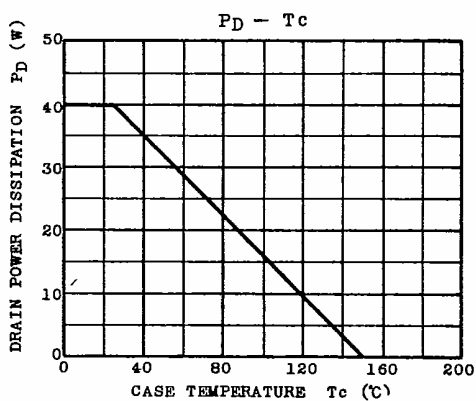
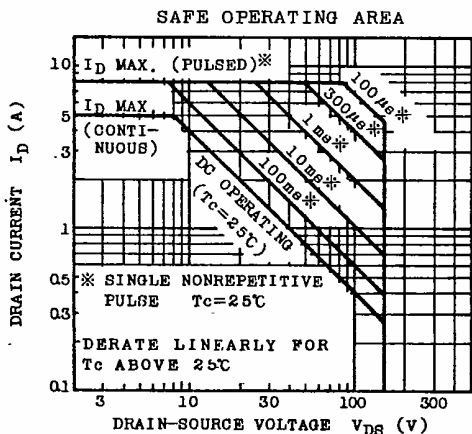
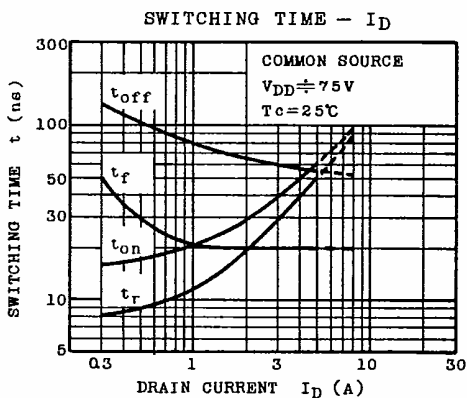
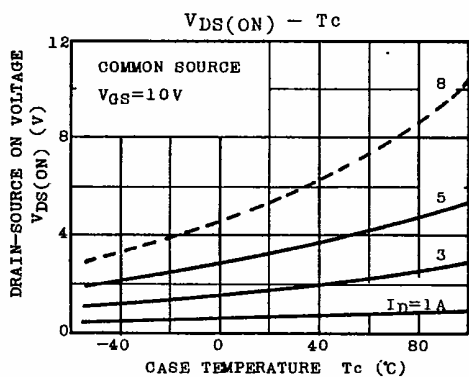
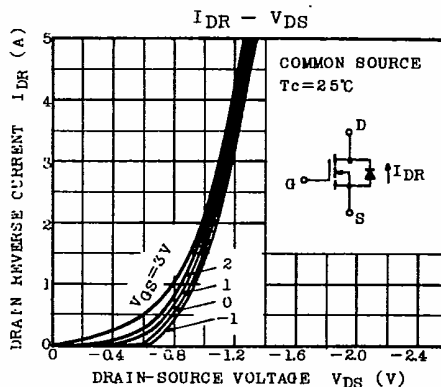
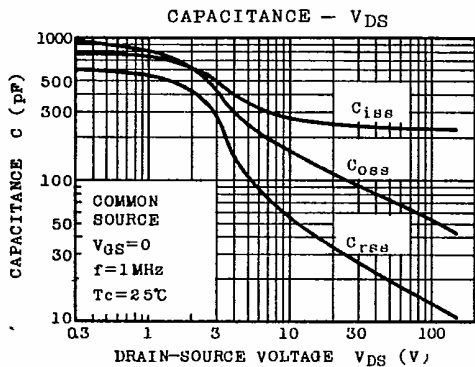
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