N-Channel MOSFET Transistor

2SK343 / K343

140V / 8A

DATASHEET

OEM – Hitachi

Source: Hitachi Databook Power Mosfet Data 4/83

Datasheet Rev. 2.0 – 09/19 – data without warranty / liability

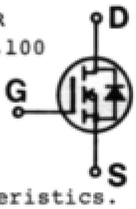
2SK343 ,2SK344

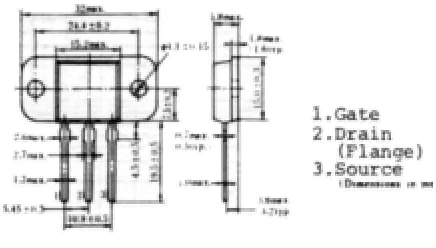
SILICON N-CHANNEL MOS FET

HIGH SPEED POWER SWITCHING
LOW FREQUENCY POWER AMPLIFIER
Complementary pair with 2SJ99,100

Features;

- Low On-Resistance.
- High Speed Switching.
- No Secondary Breakdown.
- Good Complementary Characteristics.



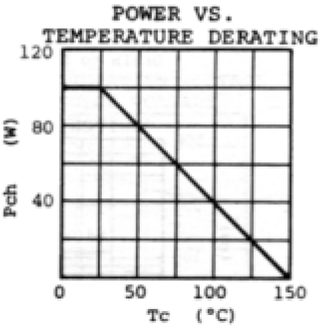


(HPAK)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	K343	K344	Unit
Drain-Source Voltage	V_{DSS}	140	160	V
Gate-Source Voltage	V_{GSS}	±20		V
Drain Current	I_D	8		A
Drain Peak Current	$I_{D(peak)}$	12		A
Body-Drain Diode Reverse Drain Current	I_{DR}	8		A
Channel Dissipation	Pch*	100		W
Channel Temperature	Tch	150		°C
Storage Temperature	Tstg	-55 ~ +150		°C

*Value at Tc=25°C

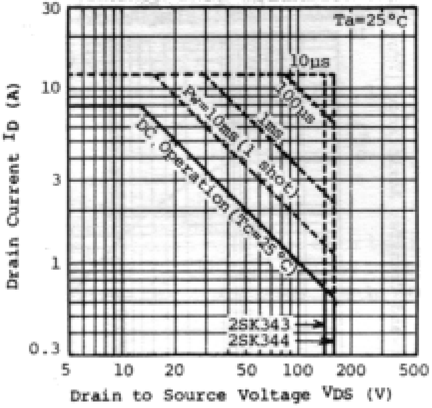


■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

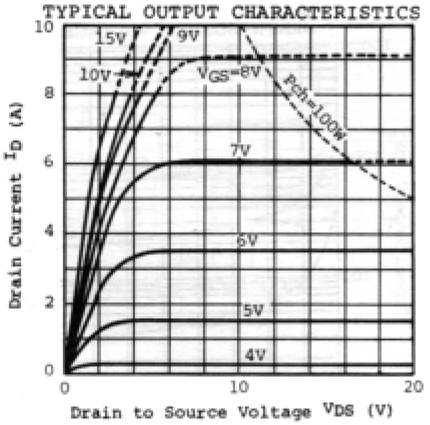
Item		Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	K343	$V_{(BR)DSS}$	I_D=10mA , V_{GS}=0	140	-	-	V
	K344			160	-	-	V
Gate-Source Leak Current		I_{GSS}	V_{GS}=±20V, V_{DS}=0	-	-	±1	µA
Zero Gate Voltage Drain Current	K343	I_{DSS}	V_{DS}=120V, V_{GS}=0	-	-	1	mA
	K344		V_{DS}=140V, V_{GS}=0				
Gate-Source Cutoff Voltage		$V_{GS(off)}$	I_D=1mA , V_{DS}=10V	2.0	-	5.0	V
Static Drain-Source On State Resistance		$R_{DS(on)}$	I_D=4A , V_{GS}=15V *	-	0.4	0.5	Ω
Drain-Source Saturation Voltage		$V_{DS(on)}$	I_D=4A , V_{GS}=15V *	-	1.6	2.0	V
Forward Transfer Admittance		$\|y_{fs}\|$	I_D=4A , V_{DS}=10V *	1.0	2.0	-	S
Input Capacitance		Ciss	V_{DS}=10 V, V_{GS}=0 f=1MHz	-	800	-	pF
Output Capacitance		Coss		-	330	-	pF
Reverse Transfer Capacitance		Crss		-	60	-	pF
Turn-On Delay Time		$t_{d(on)}$	I_D= 2A , V_{GS}= 15V R_L= 15Ω	-	15	-	ns
Rise Time		t_r		-	35	-	ns
Turn-Off Delay Time		$t_{d(off)}$		-	60	-	ns
Fall Time		t_f		-	50	-	ns
Body-Drain Diode Forward Voltage		V_{DF}	I_F= 4A , V_{GS}=0	-	0.9	-	V
Body-Drain Diode Reverse Recovery Time		t_{rr}	I_F=4A , V_{GS}=0	-	250	-	ns

*Pulse Test

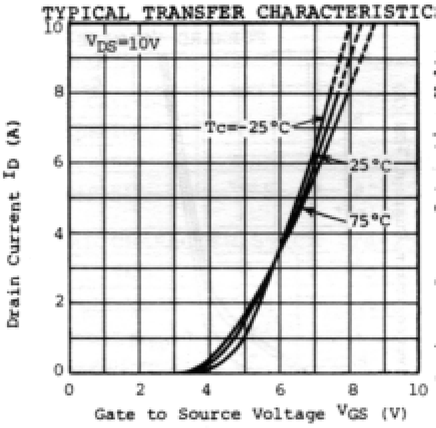
MAXIMUM SAFE OPERATION AREA



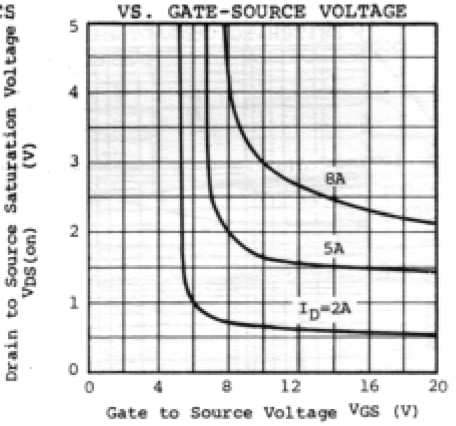
TYPICAL OUTPUT CHARACTERISTICS



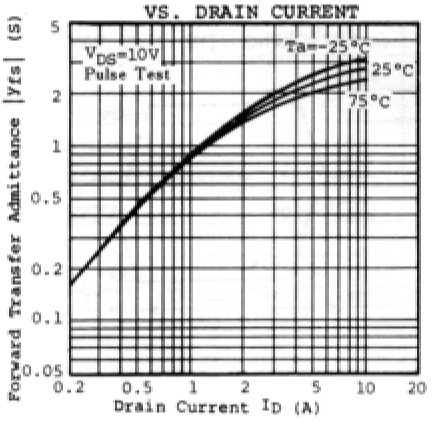
TYPICAL TRANSFER CHARACTERISTICS



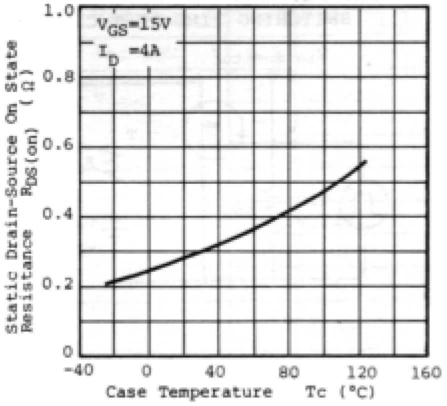
DRAIN-SOURCE SATURATION VOLTAGE VS. GATE-SOURCE VOLTAGE



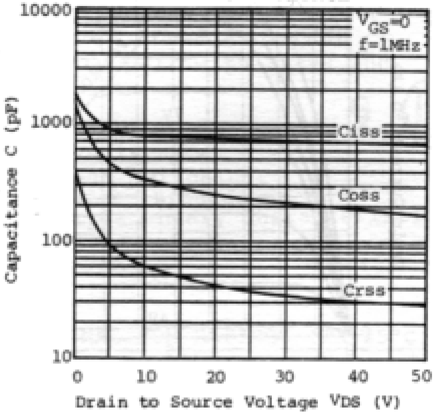
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT



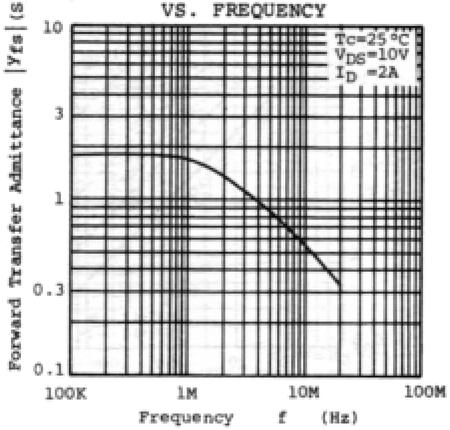
STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. TEMPERATURE



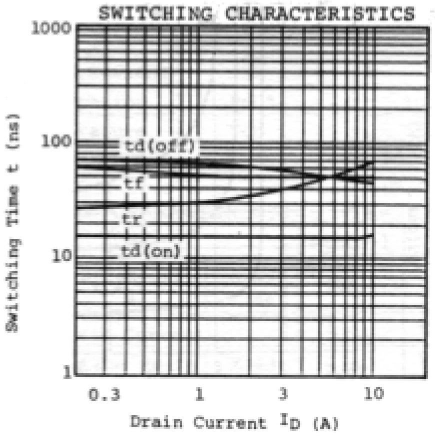
TYPICAL CAPACITANCE VS. DRAIN-SOURCE VOLTAGE



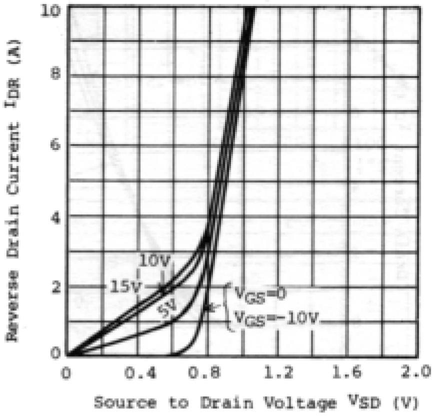
FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



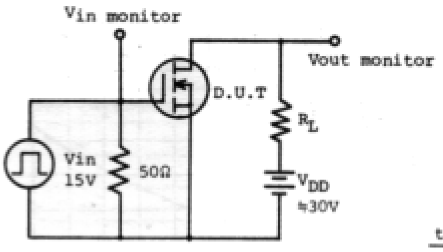
SWITCHING CHARACTERISTICS



MAXIMUM BODY-DRAIN DIODE FORWARD VOLTAGE



SWITCHING TIME TEST CIRCUIT



SWITCHING TIME TEST WAVEFORMS