

# 2SJ55, 2SJ56

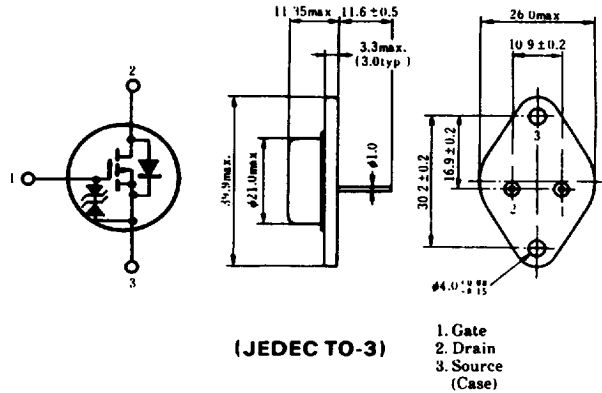
HITACHI/(OPTOELECTRONICS)

## SILICON P-CHANNEL MOS FET

**LOW FREQUENCY POWER AMPLIFIER**  
Complementary Pair with 2SK175, 2SK176

### FEATURES

- High Power Gain.
- Excellent Frequency Response.
- High Speed Switching.
- Wide Area of Safe Operation.
- Enhancement-Mode.
- Good Complementary Characteristics.
- Equipped with Gate Protection Diodes.



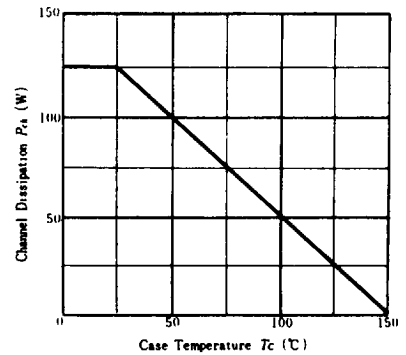
(Dimensions in mm)

### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Rating		Unit
		2SJ55	2SJ56	
Drain-Source Voltage	$V_{DSX}$	-180	-200	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$		V
Drain Current	$I_D$	-8		A
Body-Drain Diode Reverse Drain Current	$I_{DR}$	-8		A
Channel Dissipation	$P_{ch}$	125		W
Channel Temperature	$T_{ch}$	150		$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-55 \sim +150$		$^\circ\text{C}$

\*Value at  $T_a=25^\circ\text{C}$

### POWER VS. TEMPERATURE DERATING

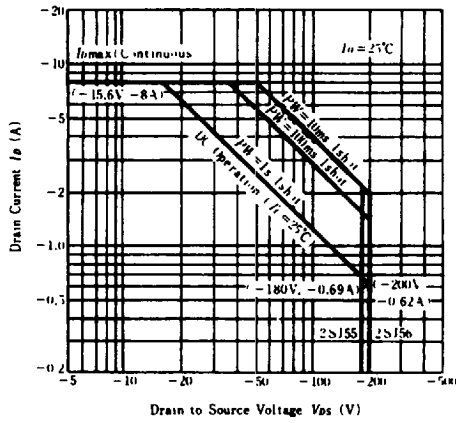


### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

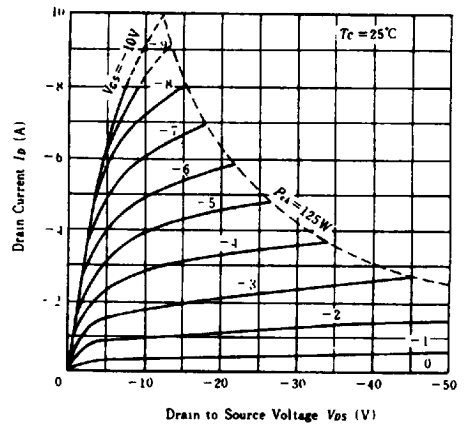
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSX}$	$I_D=-10\text{mA}, V_{GS}=10\text{V}$	-180	—	—	V
			-200	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G=\pm 100\mu\text{A}, V_{DS}=0$	$\pm 20$	—	—	V
Gate-Source Cutoff Voltage	$V_{GSOFF}$	$I_D=-100\text{mA}, V_{DS}=-10\text{V}$	-0.15	—	-1.45	V
Drain-Source Saturation Voltage	$V_{DS(sat)}$	$I_D=-8\text{A}, V_{GS}=0^*$	—	—	-12	V
Forward Transfer Admittance	$ y_{fs} $	$I_D=-3\text{A}, V_{DS}=-10\text{V}^*$	0.7	1.0	1.4	S
Input Capacitance	$C_{iss}$	$V_{GS}=5\text{V}, V_{DS}=-10\text{V}, f=1\text{MHz}$	—	1000	—	pF
Output Capacitance	$C_{oss}$		—	470	—	pF
Reverse Transfer Capacitance	$C_{rss}$		—	50	—	pF
Turn-on Time	$t_{on}$	$V_{DD}=-30\text{V}, I_D=-4\text{A}$	—	320	—	ns
Turn-off Time	$t_{off}$		—	120	—	ns

\*Pulse Test

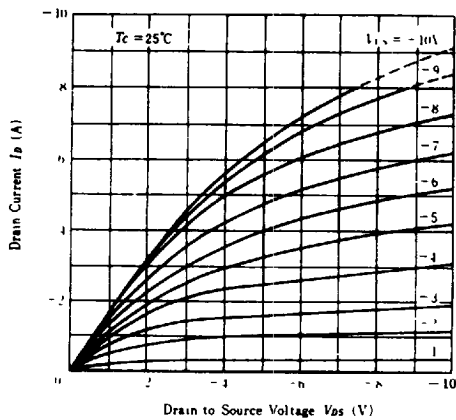
## MAXIMUM SAFE OPERATION AREA



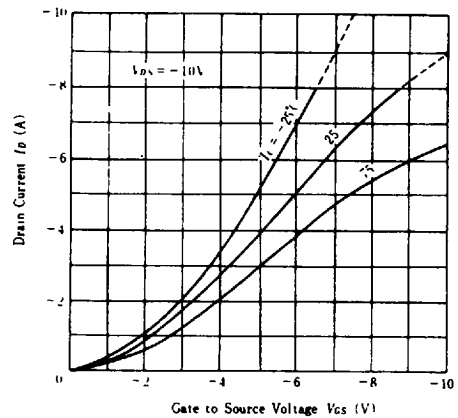
## TYPICAL OUTPUT CHARACTERISTICS



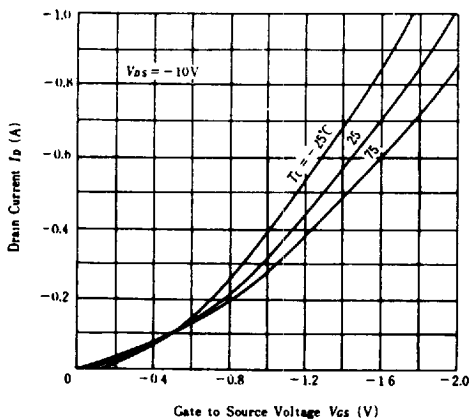
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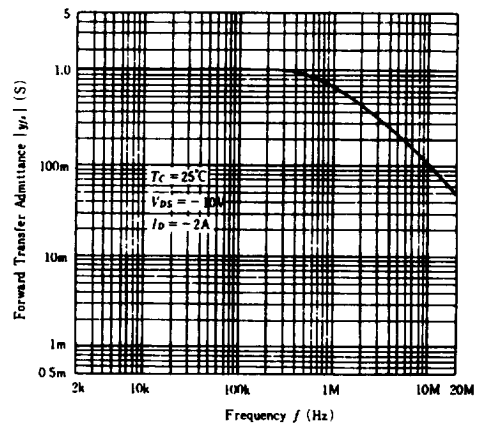
## TYPICAL TRANSFER CHARACTERISTICS



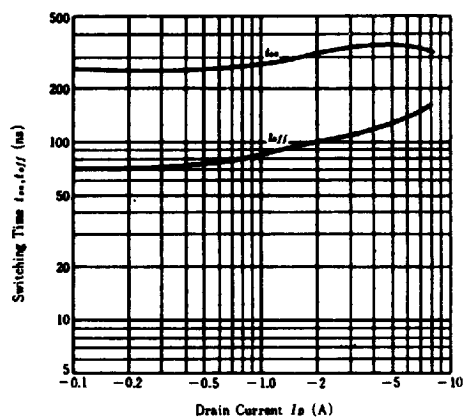
## TYPICAL TRANSFER CHARACTERISTICS



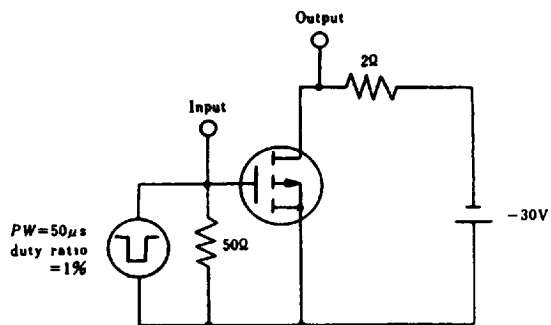
## FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



# SWITCHING TIME VS. DRAIN CURRENT



# SWITCHING TIME TEST CIRCUIT



# WAVEFORMS

