

FEATURES

- High speed, high current switching
- Current sharing capability when paralleled
- Directly interface to CMOS, DTL, TTL logic
- Simple DC biasing
- Extended safe operating area
- Inherently temperature stable
- Typical t_{on} and $t_{off} < 5\text{ns}$

APPLICATIONS

- Switching power supplies
- DC to DC inverters
- CMOS and TTL to high current interface
- Line drivers
- Logic buffers
- Pulse amplifiers
- High frequency linear amplifiers

Datasheet.Directory**ABSOLUTE MAXIMUM RATINGS**(T_A = 25°C unless otherwise noted)

Drain-source Voltage

IVN6660 60V

IVN6661 90V

Drain-gate Voltage

IVN6660 60V

IVN6661 90V

Continuous Drain Current (see note 1) 2.0A

Peak Drain Current (see note 2) 3.0A

Continuous Forward Gate Current 2.0mA

Peak-gate Forward Current 100mA

Peak-gate Reverse Current 100mA

Gate-source Forward (Zener) Voltage +15V

Gate-source Reverse (Zener) Voltage -0.3V

Continuous Device Dissipation at (or below)

25°C Case Temperature 8.33W

Linear Derating Factor 67mW/°C

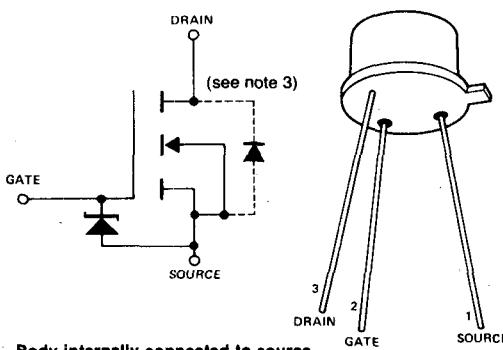
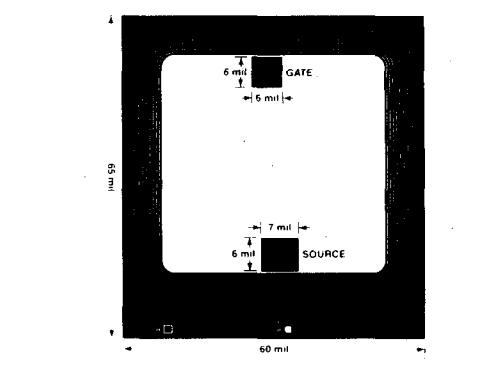
Operating Junction

Temperature Range -55 to +150°C

Storage Temperature Range -55 to +150°C

Lead Temperature

(1/16 in. from case for 10 sec) +300°C

Note 1. T_C = 25°C; controlled by typical $r_{DS(on)}$ and maximum power dissipation.**Note 2.** Pulse width 80μsec, duty cycle 1.0%.**Note 3.** The Drain-source diode is an integral part of the MOSFET structure.**SCHEMATIC DIAGRAM (OUTLINE DWG. TO-39)****CHIP TOPOGRAPHY**

2N6660-1

INTERSIL

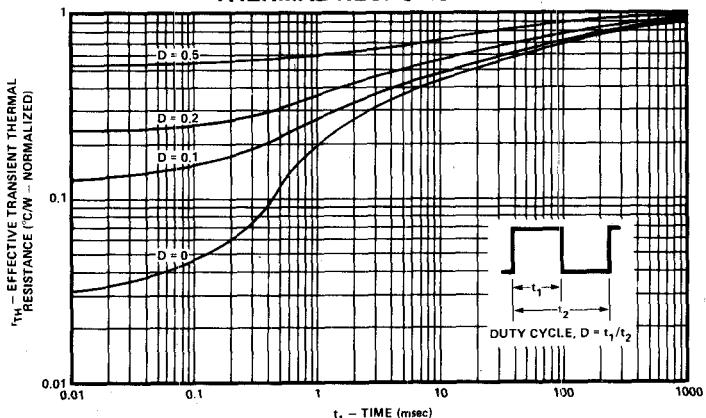
ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

CHARACTERISTIC			IVN6660			IVN6661			UNIT	TEST CONDITIONS	
			MIN	TYP	MAX	MIN	TYP	MAX			
S T A T I C	1	BV _{DSS}	Drain Source Breakdown	60			90			V	V _{GS} = 0, I _D = 10μA
	2			60			90				V _{GS} = 0, I _D = 2.5mA
	3	V _{GS(th)}	Gate Threshold Voltage	0.8		2.0	0.8		2.0		V _{DS} = V _{GS} , I _D = 1mA
	4	I _{GSS}	Gate-Body Leakage		0.5	100		0.5	100	nA	V _{GS} = 15V, V _{DS} = 0
	5					500			500		V _{GS} = 15V, V _{DS} = 0, TA = 125°C (Note 2)
	6					10			10		V _{DS} = Max. Rating, V _{GS} = 0
	7	I _{DSS}	Zero Gate Voltage Drain Current			500			500	μA	V _{DS} = 0.80 Max. Rating, V _{GS} = 0, TA = 125°C (Note 2)
	8					100			100		V _{DS} = 25V, V _{GS} = 0
	9	I _{D(on)}	ON-State Drain Current	1.0	2		1.0	2		A	V _{DS} = 25V, V _{GS} = 10V
	10					0.3			0.4		V _{DS} = 5V, I _D = 0.1 A
	11	V _{D(on)}	Drain-Source Saturation Voltage		1.0	1.5		1.1	1.6	V	V _{GS} = 5V, I _D = 0.3 A
	12					0.9			1.3		V _{GS} = 10V, I _D = 0.5 A
	13					2.2	3.0		2.2		V _{GS} = 10V, I _D = 1.0 A
	14	r _{D(on)}	Static Drain-Source ON-State Resistance		2.2	3.0		2.2	4.0	Ω	V _{GS} = 10V, I _D = 1.0 A
	15	r _{d(on)}	Small-Signal Drain-Source ON-State Resistance		2.2	3.0		2.2	4.0		V _{GS} = 10V, I _D = 1.0 A, f = 1KHz
D Y N A M I C	16	g _F	Forward Transconductance	170	250		170	250		mΩ	V _{DS} = 24V, I _D = 0.5 A
	17	C _{iss}	Input Capacitance			50			50	pF	V _{GS} = 0, V _{DS} = 25V, f = 1.0MHz
	18	C _{ds}	Drain-Source Capacitance			40			40		V _{GS} = 0, V _{DS} = 24V, f = 1.0MHz
	19	C _{rss}	Reverse Transfer Capacitance			10			10		V _{GS} = 0, V _{DS} = 0, f = 1.0MHz
	20					35			35		
	21	t _{d(on)}	Turn-ON Delay Time		2	5		2	5		
	22	t _r	Rise Time		2	5		2	5		
	23	t _{d(off)}	Turn-OFF Delay Time		2	5		2	5	ns	
	24	t _f	Fall Time		2	5		2	5		

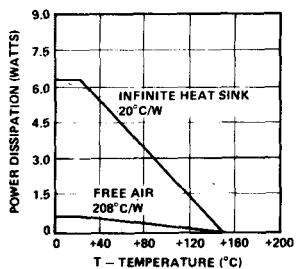
Note 1. Pulse test — 80μsec pulse, 1% duty cycle.

Note 2. Sample test.

THERMAL RESPONSE

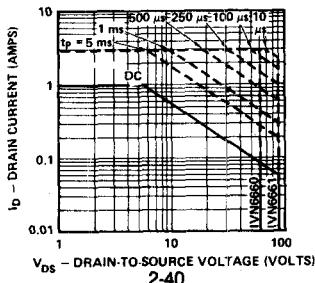


POWER DISSIPATION vs CASE OR AMBIENT TEMPERATURE



DC SAFE OPERATING REGION

T_C = 25°C



BREAKDOWN VOLTAGE VARIATION WITH TEMPERATURE

