

ULTRA LOW RON SWITCHING
SILICON EPITAXIAL JUNCTION
N-CHANNEL FIELD EFFECT TRANSISTORS

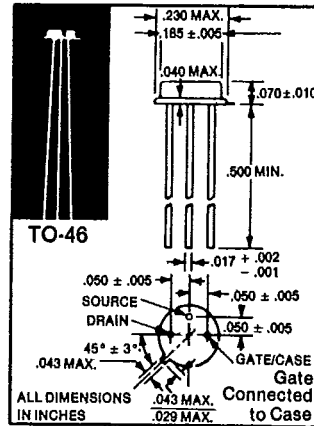
2N4445
 thru
 2N4448

GEOMETRY 448-1

- **LOW R_{DS} – 4 Ohms TYPICAL**
- **LOW C_{GD} – 15 pfd TYPICAL**
- **HIGH I_{DSS} – 400mA TYPICAL**

ELECTRICAL DATA ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	2N4445	2N4446	2N4447	2N4448	UNITS
Drain to Gate Voltage	BV_{DGS}	25	25	20	20	Volts
Gate to Source Voltage	BV_{GSO}	-25	-25	-20	-20	Volts
Peak Forward Gate Current	I_{gF}	100	100	100	100	mA
Peak Drain Current	I_D	400	400	400	400	mA
Power Dissipation (free air)	P_D	400	400	400	400	mW
Derating Factor (free air)	D_F	2.3	2.3	2.3	2.3	mW/°C
Junction Temp. (Oper. & Store)	T_J	-65°C to +200°C				
Lead Temp. (@ 1/16" ± 1/32" from case)	T_L	240°C for 10 sec.				



ELECTRICAL CHARACTERISTICS: $T_A = 25^\circ\text{C}$ (UNLESS OTHERWISE STATED)

PARAMETERS AND CONDITIONS	SYMBOL	2N4445			2N4446			2N4447			2N4448			UNITS
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Gate Leakage Current $V_{GS} = 15V, V_{DS} = 0$	I_{GSS}	-	-	3.0	-	-	3.0	-	-	3.0	-	-	3.0	nA
Gate Leakage Current $V_{GS} = 15V, V_{DS} = 0, T_A = 100^\circ\text{C}$	I_{GSS}	-	-	0.6	-	-	0.6	-	-	0.6	-	-	0.6	μA
Drain Cutoff Current $V_{GS} = -10V, V_{DS} = 5V$	$I_{D OFF}$	-	-	3.0	-	-	3.0	-	-	3.0	-	-	3.0	nA
Drain Cutoff Current $V_{GS} = -10V, V_{DS} = 5V, T_A 100^\circ\text{C}$	$I_{D OFF}$	-	-	0.6	-	-	0.6	-	-	0.6	-	-	0.6	μA
Pinch-Off Voltage $V_{DS} = 5V, I_{DS} 3nA$	V_{PO}	2.0	7.0	10	2.0	7.0	10	2.0	7.0	10	2.0	7.0	10	Volts
On Resistance $V_{DS} = 0.1V, V_{GS} = 0$	R_{DS}	-	4.0	5.0	-	7.0	10	-	4.0	6.0	-	7.0	12	Ohms
Drain-Source "On" Voltage $I_D = 10mA, V_{GS} = 0$	$V_{DS} (ON)$	-	-	50	-	-	100	-	-	60	-	-	120	mV
Drain Current* $V_{DS} = 2V, V_{GS} = 0$	I_{DSS}	150	-	-	100	-	-	150	-	-	100	-	-	mA
Gate to Source Cap. $V_{GS} = 20V$	C_{GS}	-	18	25	-	18	25	-	18	25	-	18	25	pfd
Gate to Drain Cap. $V_{GD} = 20V$	C_{GD}	-	18	25	-	18	25	-	18	25	-	18	25	pfd
Turn On Time ¹	$T_d + T_r$	-	35	-	-	35	-	-	35	-	-	35	-	nS
Turn Off Time ¹	$T_s + T_f$	-	35	-	-	35	-	-	35	-	-	35	-	nS

*Pulse Measurement 1% Duty Cycle 10 MS Max.

¹ $R_a = 50 \Omega, V_{DD} = 1.5V, R_o = 150 \Omega, V_{pulse} = -10V, Pulse\ width\ 0.5\mu s\ min., V_{GS} = 0V$



147 Sherman Street, Cambridge, MA 02140 USA
 Tel: (617) 491-1670 • FAX: 617/547-6119 • TWX: 710-320-1196