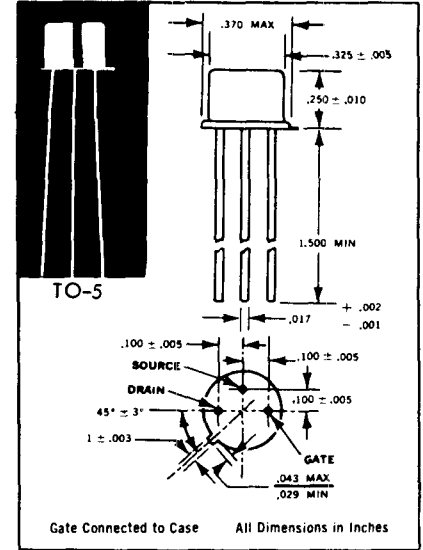


POWRFET™
SILICON EPITAXIAL JUNCTION
N-CHANNEL FIELD EFFECT TRANSISTORS

CP650
CP651
CP652
CP653

GEOMETRY 424, PG. 58

- LOW R_{DS} – 5 Ohms TYPICAL
- LOW C_{GD} – 20 pfd TYPICAL
- HIGH I_{DSS} – 0.5 Amp TYPICAL
- HIGH g_m – 150,000 μ mhos TYPICAL



ELECTRICAL DATA **ABSOLUTE MAXIMUM RATINGS**

PARAMETER	SYMBOL	CP650	CP651	CP652	CP653	UNITS
Drain to Source Voltage	BV_{DSO}	25	20	20	20	Volts
Drain to Gate Voltage	BV_{DGO}	25	20	20	20	Volts
Gate to Source Voltage	BV_{GSO}	-25	-20	-20	-20	Volts
Peak Drain Current	I_D	1.2	0.6	0.6	0.6	Amps
Power Dissipation 25°C Case	P_D	8.0	8.0	8.0	8.0	Watts
Derating Factor (slope)	D_F	22	22	22	22	°C/W
Junction Temp. (Oper. & Store)	T_J	-65°C to +200°C				

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

PARAMETERS AND CONDITIONS	SYMBOL	AMPLIFIERS						SWITCHES						UNITS
		CP650			CP651			CP652			CP653			
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Gate Leakage Current $V_{GS} = -15V, V_{DS} = 0$	I_{GSS}	-	5.0	100	-	5.0	100	-	-	100	-	-	100	nA
Gate Leakage Current $V_{GS} = -15V, V_{DS} = 0, T_C = 100^\circ C$	I_{GSS}	-	-	10	-	-	10	-	-	10	-	-	10	μA
Transconductance ¹ $V_{DS} = 15V, V_{GS} = 0$	g_m	0.1	0.15	0.25	0.075	0.1	0.2	-	0.1	-	-	0.06	-	mhos
Pinch-Off Voltage $V_{DS} = 5V, I_{DS} = 1.0mA/3nA^*$	V_{PO}	2.0	5.0	10	2.0	5.0	10	2.0*	5.0*	10*	2.0*	5.0*	10*	Volts
On Resistance $I_{DS} = 10mA, V_{GS} = 0$	R_{DS}	-	4.0	-	-	7.0	-	-	4.0	6.0	-	7.0	12	Ohms
Gate to Source Cap. $V_{GS} = -20V$	C_{GS}	-	20	25	-	20	25	-	20	25	-	20	25	pfd
Gate to Drain Cap. $V_{GD} = -20V$	C_{GD}	-	20	25	-	20	25	-	20	25	-	20	25	pfd
Drain Current ¹ $V_{DS} = 15V, V_{GS} = 0$	I_{DSS}	0.3	0.6	1.2	0.1	0.3	0.5	0.1	-	-	0.06	-	-	Amps
Gain-Bandwidth Product $V_{DS} = 15V, V_{GS} = 0$	F_t	-	1.0	-	-	1.0	-	-	1.0	-	-	1.0	-	GHz

¹ Pulse Measurement 1% Duty Cycle 10 mS Max.

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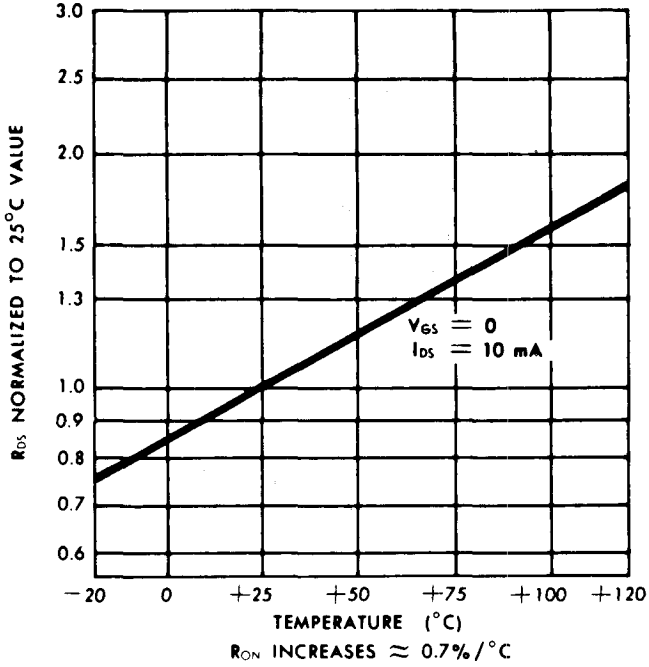
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CP650 thru CP653

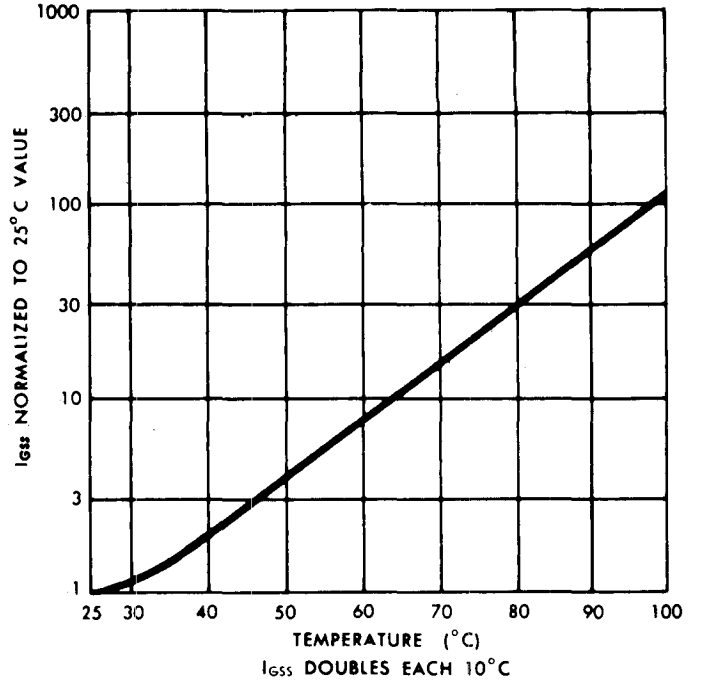
2N4445 thru 2N4448

TYPICAL CHARACTERISTICS

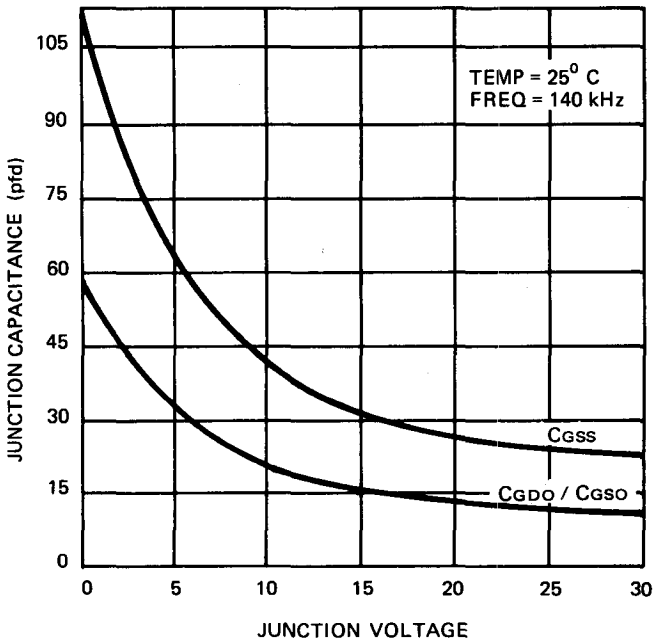
ON RESISTANCE VS. TEMPERATURE



GATE LEAKAGE CURRENT VS. TEMPERATURE



JUNCTION CAPACITANCE VS. VOLTAGE



ON RESISTANCE VS. GATE VOLTAGE

