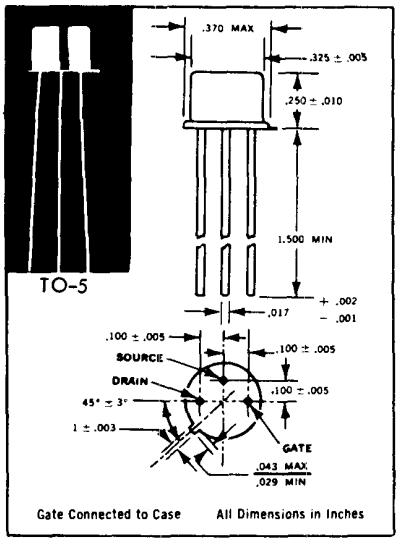
POWRFET™
SILICON EPITAXIAL JUNCTION N-CHANNEL FIELD EFFECT TRANSISTORS

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 μmhos 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°C (UNLESS OTHERWISE STATED)

		AMPLIFIERS						SWITCHES						
PARAMETERS AND CONDITIONS	SYMBOL	CP650			CP651			CP652			CP653			UNITS
		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, TC = 100°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.

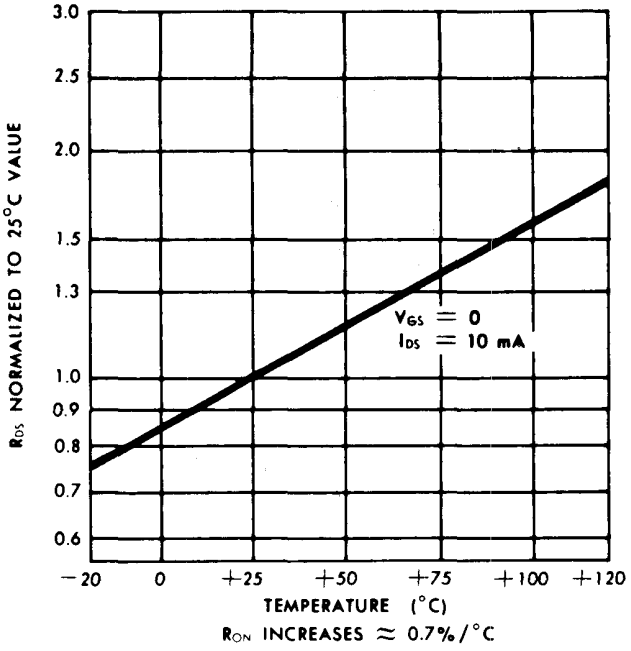
™ TRADEMARK OF CRYSTALONICS, INC.

TELEDYNE CRYSTALONICS

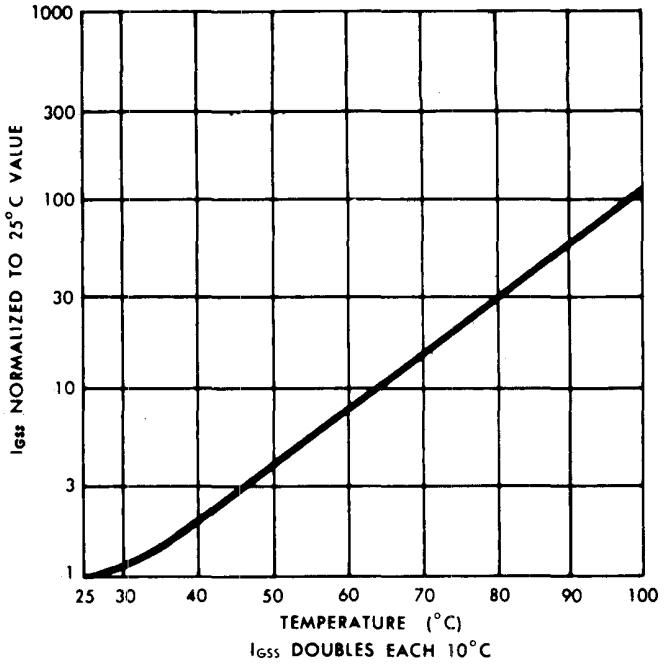
147 Sherman Street, Cambridge, Mass. 02140
Tel: (617) 491-1670 • TWX: 710-320-1196

TYPICAL CHARACTERISTICS

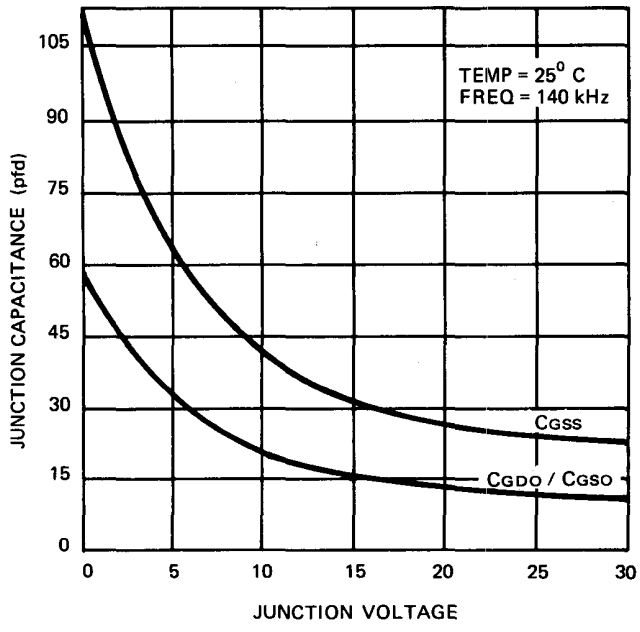
ON RESISTANCE VS. TEMPERATURE



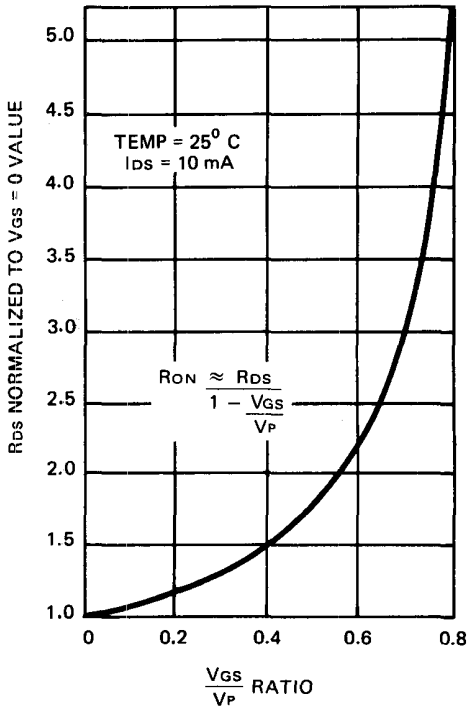
GATE LEAKAGE CURRENT VS. TEMPERATURE



JUNCTION CAPACITANCE VS. VOLTAGE



ON RESISTANCE VS. GATE VOLTAGE



TELEDYNE CRYSTALONICS

147 Sherman Street, Cambridge, Mass. 02140
Tel: (617) 491-1670 • TWX: 710-320-1196