HERMETIC SILICON CARBIDE MOSFET

DESCRIPTION: A 1200 VOLT, 22 AMP POWER SILICON CARBIDE N-CHANNEL MOSFET IN AN ISOLATED HERMETIC TO-257 PACKAGE, AVAILABLE SCREENED TO ANY REQUIRED LEVEL

FEATURES:

- 80mΩ typical on-resistance
- Fast switching and reverse recovery
- Ceramic seals

MAXIMUM RATINGS ALL RATINGS ARE @ T_C = 25 °C UNLESS OTHERWISE SPECIFIED.

RATING	SYMBOL	MAX	UNITS
DRAIN-SOURCE VOLTAGE	V_{DSS}	1200	V
CONTINUOUS DRAIN CURRENT	I_D	22	A
CONTINUOUS DRAIN CURRENT, T_C = 100 ^{O}C	I_D	14	A
PULSED DRAIN CURRENT (t ≤10μs, dc ≤1%)	$I_{D,}$ pulse	80	A
GATE - SOURCE VOLTAGE	V_{GSS}	-6 to 22	V
MAXIMUM POWER DISSIPATION, T_C = 25 ^{O}C,	P_d	75	W
MAXIMUM THERMAL RESISTANCE	$R_{\theta JC}$	1.67	°C/W
MAXIMUM OPERATING AND STORAGE TEMPERATURE RANGE	Top, Tstg	-55 to 150	°C

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	MIN	TYP	MAX	UNITS
DRAIN - SOURCE BREAKDOWN VOLTAGE (VGS = 0V, ID = 1mA)	1200			V
ZERO GATE VOLTAGE DRAIN CURRENT (VDS = 1200V, VGS = 0V)			10	μA
GATE - SOURCE LEAKAGE CURRENT (VGS = +22V, VDS = 0V)			100	nA
GATE - SOURCE LEAKAGE CURRENT (VGS = -6V, VDS = 0V)			-100	nA
GATE THRESHOLD VOLTAGE (VDS = VGS, ID = 4.4mA)	1.6		4.0	V
STATIC DRAIN – SOURCE ON - STATE RESISTANCE (VGS = 18V, ID = 10A)			125	mΩ
TRANSCONDUCTANCE (VDS = 10V, ID = 10A)		3.7		S
INPUT CAPACITANCE (VGS = 0V, VDS = 800V, f = 1MHz)		2080		pF
OUTPUT CAPACITANCE (VGS = 0V, VDS = 800V, f = 1MHz)		77		pF
REVERSE TRANSFER CAPACITANCE (VGS = 0V, VDS = 800V, f = 1MHz)		16		pF

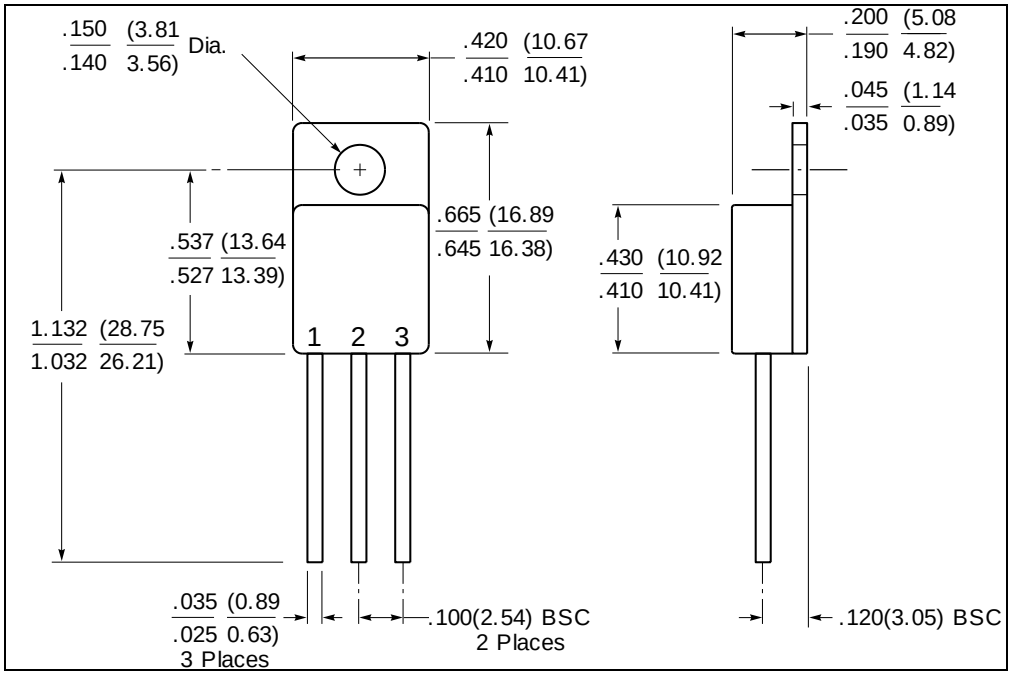
ELECTRICAL CHARACTERISTICS (CONTINUED)

CHARACTERISTIC	MIN	TYP	MAX	UNITS
Turn - on delay time (VDD = 400V, VGS = 18V, ID = 10A, RL = 40Ω, RG = 0Ω)		35		ns
Rise time (VDD = 400V, VGS = 18V, ID = 10A, RL = 40Ω, RG = 0Ω)		36		ns
Turn - off delay time (VDD = 400V, VGS = 18V, ID = 10A, RL = 40Ω, RG = 0Ω)		76		ns
Fall time (VDD = 400V, VGS = 18V, ID = 10A, RL = 40Ω, RG = 0Ω)		22		ns
Total gate charge (VDD = 400V, VGS = 18V, ID = 10A)		106		nC
Gate - Source charge (VDD = 400V, VGS = 18V, ID = 10A)		27		nC
Gate - Drain charge (VDD = 400V, VGS = 18V, ID = 10A)		31		nC
Gate plateau voltage (VDD = 400V, VGS = 18V, ID = 10A)		9.7		V
INVERSE DIODE CONTINUOUS, FORWARD CURRENT			16	A
INVERSE DIODE DIRECT CURRENT, PULSED			80	A
FORWARD VOLTAGE		4.6		V
REVERSE RECOVERY TIME		31		ns
REVERSE RECOVERY CHARGE		44		nC
PEAK REVERSE RECOVERY CURRENT		2.3		A

TECHNICAL DATA
DATA SHEET 5292, REV. -

MECHANICAL DIMENSIONS

TO-257



PINOUT TABLE

TYPE	PIN 1	PIN 2	PIN 3
N-CHANNEL MOSFET	DRAIN	SOURCE	GATE