

TECHNICAL DATA
DATA SHEET 812, REV. -

**HERMETIC POWER MOSFET
N-CHANNEL**

(Standard and Fast-FET)

DESCRIPTION: A 500 VOLT, 24 AMP, 0.23 $R_{DS(ON)}$ MOSFET IN A HERMETIC TO-258 PACKAGE.
SHD224605: Formerly SHD2243, N-Channel Enhancement Mode.
SHD224606: Formerly SHD2243F, N-Channel Enhancement Mode with Fast Intrinsic Diode.

MAXIMUM RATINGS (AT $T_j=25^{\circ}\text{C}$ UNLESS OTHERWISE SPECIFIED).

RATING	SYMBOL	MIN	TYP	MAX	UNITS
CONTINUOUS DRAIN CURRENT ($V_{DS} = 10\text{ V}$, $T_C = 25^{\circ}\text{C}$)	I_D	-	-	24	Amps
OPERATING AND STORAGE TEMPERATURE RANGE	T_{OP}/T_{STG}	-55		+150	$^{\circ}\text{C}$
THERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.32	$^{\circ}\text{C}/\text{W}$
TOTAL DEVICE POWER DISSIPATION @ $T_C = 25^{\circ}\text{C}$	P_D	-	-	390	W

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNITS
DRAIN TO SOURCE BREAKDOWN VOLTAGE ($V_{GS} = 0\text{ V}$, $I_D = 1.0\text{ mA}$)	BV_{DSS}	500	-	-	Volts
DRAIN TO SOURCE ON STATE RESISTANCE ($V_{GS} = 10\text{ V}$, $I_D = 12.0\text{ A}$)	$R_{DS(ON)}$	-	-	0.23	Ω
GATE THRESHOLD VOLTAGE ($V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$)	$V_{GS(th)}$	2.0	-	4.0	Volts
FORWARD TRANSCONDUCTANCE ($V_{DS}=10\text{V}$, $I_{DS} = 12.0\text{A}$)	g_{fs}	11	21	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT ($V_{DS} = 400\text{V}$) ($V_{GS} = 0\text{V}$, $T_J=125^{\circ}\text{C}$)	I_{DSS}	-	-	200 1.0	μA mA
GATE TO SOURCE LEAKAGE ($V_{GS} = \pm 20\text{V}_{DC}$, $V_{DS} = 0$)	I_{GSS}	-	-	+/- 100	nA
TOTAL GATE CHARGE ($V_{GS} = 10\text{V}$, $V_{DS} = 250\text{V}$, $I_D = 12.0\text{A}$)	Q_g	-	-	190 160	nC
INPUT CAPACITANCE OUTPUT CAPACITANCE REVERSE TRANSFER CAPACITANCE ($V_{GS} = 0\text{V}$, $V_{DS} = 25\text{V}$, $f = 1.0\text{ MHz}$)	C_{iss} C_{oss} C_{rss}	-	4200 450 135	-	pF

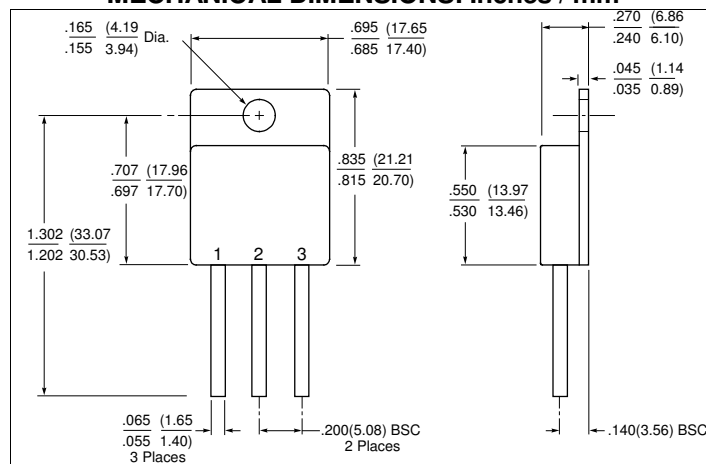
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SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

CHARACTERISTIC		SYMBOL	MIN	TYP	MAX	UNITS
DIODE FORWARD VOLTAGE ($I_S = 24A$, $V_{GS} = 0V$)		V_{SD}	-	-	1.5	Volts
DIODE REVERSE RECOVERY TIME ($I_F = 24A$, di/dt 100 A/ μ s, $V_R = 100V$)	SHD224605 SHD224606	t_{rr}	-	600	250	ns

MECHANICAL DIMENSIONS: Inches / mm



TO-258

PINOUT TABLE

DEVICE TYPE	PIN 1	PIN 2	PIN 3
MOSFET TO-258 PACKAGE	DRAIN	SOURCE	GATE

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