

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	$\Omega$
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	$\mu\text{A}$ $\text{mA}$
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

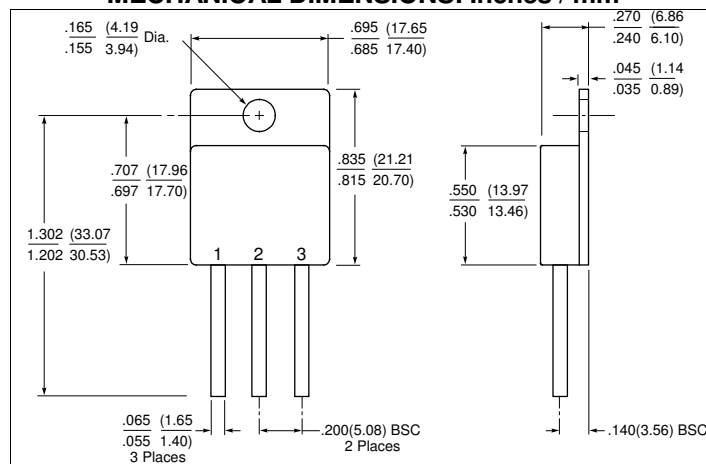
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SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

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/ $\mu$ 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

**TECHNICAL DATA**

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