

TECHNICAL DATA
DATA SHEET 4102, REV. -

HERMETIC POWER MOSFET P-CHANNEL

FEATURES:

- -100 Volt, 0.07 Ohm, -34A MOSFET
- Fast Switching
- Low $R_{DS(on)}$
- Electrically Equivalent to IRF5210
- Add an "S" to the end of the part number for S-100 screening, SHD225452S
- Add a "C" to the part number for ceramic seals, SHDC225452

MAXIMUM RATINGS

ALL RATINGS ARE AT $T_C = 25^\circ\text{C}$ UNLESS OTHERWISE SPECIFIED.

RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	V_{GS}	-	-	± 20	Volts
CONTINUOUS DRAIN CURRENT $V_{GS} = -10\text{V}$, $T_C = 25^\circ\text{C}$ $V_{GS} = -10\text{V}$, $T_C = 100^\circ\text{C}$	I_D	-	-	-34 -21	Amps
OPERATING AND STORAGE TEMPERATURE	T_{OP}/T_{STG}	-55	-	+150	$^\circ\text{C}$
THERMAL RESISTANCE, JUNCTION TO CASE	R_{thJC}	-	-	1.0	$^\circ\text{C/W}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	P_D	-	-	125	Watts

ELECTRICAL CHARACTERISTICS

DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}$, $I_D = -250\mu\text{A}$	BV_{DSS}	-100	-	-	Volts
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = -10\text{V}$, $I_D = -21\text{A}$	$R_{DS(ON)}$	-	-	0.07	Ω
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	$V_{GS(th)}$	-2.0	-	-4.0	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} = -15\text{V}$, $I_{DS} = -21\text{A}$	g_{fs}	10	-	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = \text{Max. Rating}$, $V_{GS} = 0\text{V}$ $V_{DS} = 0.8 \times \text{Max. Rating}$, $V_{GS} = 0\text{V}$, $T_J = 125^\circ\text{C}$	I_{DSS}	-	-	-25 -250	μA
GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = 20\text{V}$	I_{GSS}	-	-	100	nA
GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20\text{V}$				-100	
TOTAL GATE CHARGE $V_{GS} = -10\text{V}$, GATE TO SOURCE CHARGE $V_{DS} = -80\text{V}$, GATE TO DRAIN CHARGE $I_D = -21\text{A}$	Q_g Q_{gs} Q_{gd}	-	-	180 25 100	nC
TURN ON DELAY TIME $V_{DD} = -50\text{V}$, RISE TIME $I_D = -21\text{A}$	$t_{d(ON)}$ t_r	-	-	28 150	nsec
TURN OFF DELAY TIME $R_G = 2.5\Omega$ FALL TIME	$t_{d(OFF)}$ t_f			100 120	
DIODE FORWARD VOLTAGE $T_J = 25^\circ\text{C}$, $I_S = -21\text{A}$ $V_{GS} = 0\text{V}$	V_{SD}	-	-	-1.6	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}$, $I_f = -21\text{A}$ $di_f/ds = 100\text{A}/\mu\text{sec}$	t_{rr} Q_{rr}	-	-	260 1.8	nsec μC
INPUT CAPACITANCE $V_{GS} = 0\text{V}$	C_{iss}	-	2730	-	pF
OUTPUT CAPACITANCE $V_{DS} = -25\text{V}$	C_{oss}		824		
REVERSE TRANSFER CAPACITANCE $f = 1.0\text{MHz}$	C_{rss}		465		

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