Features

1) Low on-resistance
2) Fast switching speed
3) Fast reverse recovery
4) Easy to parallel
5) Simple to drive
6) Pb-free lead plating ; RoHS compliant

Parameter	Rating	Units
V_{DS}	**900**	V
$I_{D\ @\ 25^{\circ}C}$	**74**	A
$R_{DS(on)}$	**30**	m Ω

Applications

- Solar inverters
- DC/DC converters
- Switch mode power supplies
- Induction heating

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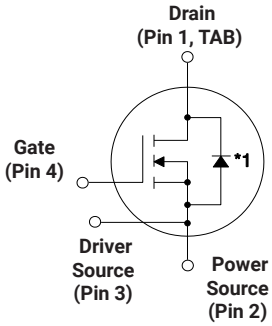
Package



(1) Drain
(2) Power Source
(3) Driver Source
(4) Gate

*1 Body Diode

Inner circuit

Maximum Ratings (T_C = 25 ˚C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{DSmax}	Drain - Source Voltage	900	V	V_{GS} = 0 V, I_D = 100 µA	
V_{GSmax}	Gate - Source Voltage (dynamic)	-8/+19	V	AC (f >1 Hz)	
V_{GSop}	Gate - Source Voltage (static)	-4/+15	V	Static	
I_D	Continuous Drain Current	74	A	V_{GS} = 15 V, T_C = 25˚C	
		50		V_{GS} = 15 V, T_C = 100˚C	
$I_{D(pulse)}$	Pulsed Drain Current	200	A	Pulse width t_P limited by T_{jmax}	
P_D	Power Dissipation	243	W	T_C=25˚C, T_J = 150 ˚C	
T_J , T_{stg}	Operating Junction and Storage Temperature	-40 to +150	˚C		
T_L	Solder Temperature	260	˚C	1.6mm (0.063”) from case for 10s	
M_d	Mounting Torque, (M3 or 6-32 screw)	1 8.8	Nm lbf-in		

Note (1): When using MOSFET Body Diode V_{GSmax} = -4V/+19V
Note (2): MOSFET can also safely operate at 0/+15 V

Electrical Characteristics (T_C = 25˚C unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions	Note
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	900			V	V_{GS} = 0 V, I_D = 100 µA	
$V_{GS(th)}$	Gate Threshold Voltage	1.7	2.4	3.5	V	V_{DS} = V_{GS}, I_D = 11 mA	
			2.1		V	V_{DS} = V_{GS}, I_D = 11 mA, T_J = 150°C	
I_{DSS}	Zero Gate Voltage Drain Current		1	100	µA	V_{DS} = 900 V, V_{GS} = 0 V	
I_{GSS}	Gate-Source Leakage Current		10	250	nA	V_{GS} = 15 V, V_{DS} = 0 V	
$R_{DS(on)}$	Drain-Source On-State Resistance		30	40	mΩ	V_{GS} = 15 V, I_D = 35 A	
			42			V_{GS} = 15 V, I_D = 35 A, T_J = 150°C	
g_{fs}	Transconductance		23		S	V_{DS}= 20 V, I_{DS}= 35 A	
			22			V_{DS}= 20 V, I_{DS}= 35 A, T_J = 150°C	
C_{iss}	Input Capacitance		1358		pF	V_{GS} = 0 V, V_{DS} = 600 V f = 1 MHz V_{AC} = 25 mV	
C_{oss}	Output Capacitance		144				
C_{rss}	Reverse Transfer Capacitance		5				
E_{oss}	C_{oss} Stored Energy		30		µJ		
E_{ON}	Turn-On Switching Energy (SiC Diode FWD)		133		µJ	V_{DS} = 600 V, V_{GS} = -4 V/15 V, I_D = 35 A, $R_{G(ext)}$ = 2.5Ω, L= 59 µH, T_J = 150°C	
E_{OFF}	Turn Off Switching Energy (SiC Diode FWD)		112				
E_{ON}	Turn-On Switching Energy (Body Diode FWD)		247		µJ	V_{DS} = 600 V, V_{GS} = -4 V/15 V, I_D = 35 A, $R_{G(ext)}$ = 2.5Ω, L= 59 µH, T_J = 150°C	
E_{OFF}	Turn Off Switching Energy (Body Diode FWD)		97				
$t_{d(on)}$	Turn-On Delay Time		10		ns	V_{DD} = 600 V, V_{GS} = -4 V/15 V I_D = 35 A, $R_{G(ext)}$ = 2.5 Ω, Timing relative to V_{DS} Inductive load	
t_r	Rise Time		15				
$t_{d(off)}$	Turn-Off Delay Time		24				
t_f	Fall Time		9				
$R_{G(int)}$	Internal Gate Resistance		3		Ω	f = 1 MHz, V_{AC} = 25 mV	
Q_{gs}	Gate to Source Charge		20		nC	V_{DS} = 600 V, V_{GS} = -4 V/15 V I_D = 35 A Per IEC60747-8-4 pg 21	
Q_{gd}	Gate to Drain Charge		26				
Q_g	Total Gate Charge		72				

Reverse Diode Characteristics (T_C = 25˚C unless otherwise specified)

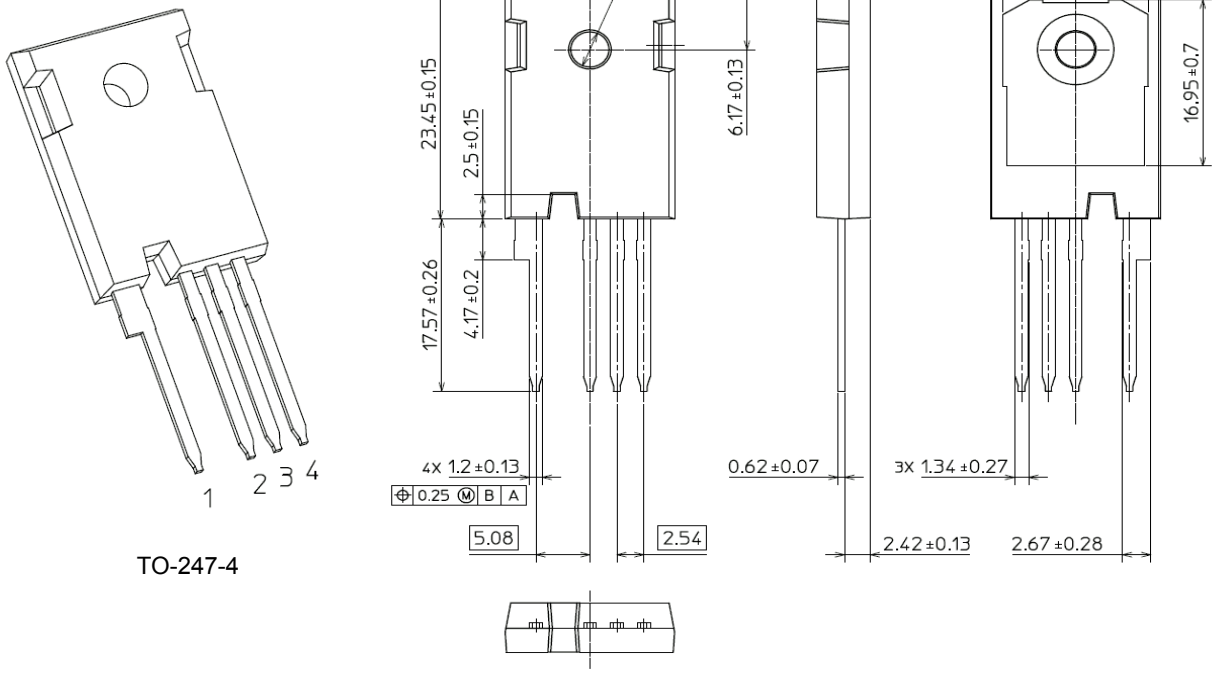
Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_{SD}	Diode Forward Voltage	4.5		V	V_{GS} = -4 V, I_{SD} = 17.5 A	
		4.0		V	V_{GS} = -4 V, I_{SD} = 17.5 A, T_J = 150 °C	
I_S	Continuous Diode Forward Current		48	A	V_{GS} = -4 V, T_C = 25 °C	
$I_{S, pulse}$	Diode pulse Current		200	A	V_{GS} = -4 V, pulse width t_P limited by T_{jmax}	
t_{rr}	Reverse Recover time	24		ns	V_{GS} = -4 V, I_{SD} = 35 A, V_R = 600 V dif/dt = 3075 A/µs, T_J = 150 °C	
Q_{rr}	Reverse Recovery Charge	550		nC		
I_{rrm}	Peak Reverse Recovery Current	35		A		

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.48	0.52	°C/W		
$R_{\theta JA}$	Thermal Resistance From Junction to Ambient		40			

Package Dimensions

Unit: mm



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