ON Semiconductor®

ISL9R2480G2

PRELIMINARY | *Data Sheet* | *January 2002*

24A, 800V Stealth™ Diode

The ISL9R2480G2 is a Stealth™ diode optimized for low loss performance in high frequency applications. The Stealth family exhibits low reverse recovery current (I_{RRM}) and exceptionally soft recovery under typical operating conditions.

This device is intended for use as a free wheeling or boost diode in power supplies and other power switching applications. The low I_{RRM} and short t_a phase reduce loss in switching transistors. The soft recovery minimizes ringing, expanding the range of conditions under which the diode may be operated without the use of additional snubber circuitry.

Formerly developmental type TA49392.

Ordering Information

PART NUMBER	PACKAGE	BRAND
ISL9R2480G2	TO-247	R2480G2

NOTE: When ordering, use the entire part number.

Symbol

Features

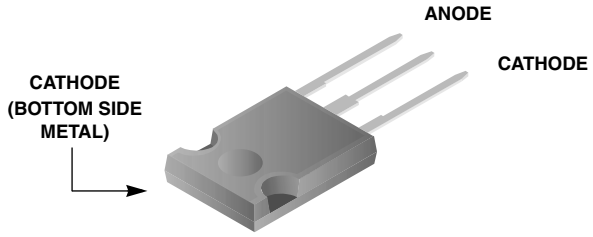
- Soft Recovery . . . . . $t_b / t_a > 1.2$
- Fast Recovery . . . . . $t_{rr} < 35ns$
- Operating Temperature . . . . . 175°C
- Reverse Voltage 800V

Applications

- Switch Mode Power Supplies
- PFC Boost Diode
- UPS Free Wheeling Diode
- Motor Drive FWD
- SMPS FWD
- Snubber Diode

Packaging

JEDEC STYLE 2 LEAD TO-247



Absolute Maximum Ratings $T_C = 25°C$, Unless Otherwise Specified

			UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	800	V
Working Peak Reverse Voltage	V_{RWM}	800	V
DC Blocking Voltage	V_R	800	V
Average Rectified Forward Current	$I_{F(AV)}$	24	A
Repetitive Peak Surge Current (Square Wave, 20kHz)	I_{FRM}	48	A
Nonrepetitive Peak Surge Current (Halfwave 1 Phase 60Hz)	I_{FSM}	240	A
Maximum Power Dissipation	P_D	160	W
Operating and Storage Temperature	T_{STG}, T_J	-55 to 175	°C

October-2017, Rev. 2

Publication Order Number:
ISL9R2480G2/D

Electrical Specifications $T_C = 25^oC$, Unless Otherwise Specified

SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
BV	I_R = 1mA	800	-	-	V
V_F	I_F = 24A	-	2.5	3.0	V
	I_F = 24A, $T_C = 125^oC$	-	2.0	2.5	V
I_R	V_R = 600V	-	-	100	μA
	V_R = 600V, $T_C = 125^oC$	-	-	1.0	mA
t_{rr}	I_F = 1A, dI_F/dt = 100A/μs, V_R = 30V	-	27	35	ns
	I_F = 24A, dI_F/dt = 100A/μs, V_R = 30V	-	34	45	ns
t_{rr}	I_F = 24A, dI_F/dt = 200A/μs, V_R = 520V, $T_C = 25^oC$	-	35	-	ns
I_{RRM}		-	4.2	-	A
Q_{RR}		-	75	-	nC
t_{rr}	I_F = 24A, dI_F/dt = 200A/μs, V_R = 520V, $T_C = 125^oC$	-	145	-	ns
S		-	3.8	-	
I_{RRM}		-	5.0	-	A
Q_{RR}		-	500	-	nC
t_{rr}	I_F = 24A, dI_F/dt = 900A/μs, V_R = 520V, $T_C = 125^oC$	-	72	-	ns
S		-	1.96	-	
I_{RRM}		-	17.3	-	A
Q_{RR}		-	710	-	nC
dI_M/dt		-	600	-	A/μs
C_J	V_R = 10V, I_F = 0A	-	95	-	pF
$R_{\theta JC}$		-	-	0.92	$^oC/W$

DEFINITIONS

BV = Breakdown Voltage.

V_F = Instantaneous forward voltage (pw = 300μs, D = 2%).

I_R = Instantaneous reverse current.

t_{rr} = Reverse recovery time ($t_a + t_b$).

I_{RRM} = Maximum reverse recovery current.

Q_{RR} = Reverse recovery charge.

S = Softness factor (t_b / t_a).

dI_M/dt = Maximum di/dt during t_b.

C_J = Junction Capacitance.

$R_{\theta JC}$ = Thermal resistance junction to case.

pw = pulse width.

D = Duty cycle

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
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