

Pb Free Plating Product

S30K60T



30Amperes,600Volts Single Fast Recovery Epitaxial Diode

<p>APPLICATION</p> <ul style="list-style-type: none"> • Freewheeling, Snubber, Clamp • Inversion Welder • PFC • Plating Power Supply • Ultrasonic Cleaner and Welder • Converter & Chopper • UPS 	<p>TO-247-2L</p> <p>Internal Configuration</p>
<p>PRODUCT FEATURE</p> <ul style="list-style-type: none"> • Ultrafast Recovery Time • Soft Recovery Characteristics • Low Recovery Loss • Low Forward Voltage • High Surge Current Capability • Low Leakage Current 	

GENERAL DESCRIPTION

S30K60T using the latest FRED FAB process(planar passivation pellet) with ultrafast and soft recovery characteristics.

ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
V _R	Maximum D.C. Reverse Voltage		600	V
V _{RRM}	Maximum Repetitive Reverse Voltage		600	V
I _{F(AV)}	Average Forward Current	T _C =110°C, Per Diode	30	A
I _{F(RMS)}	RMS Forward Current	T _C =110°C, Per Diode	42	A
I _{FSM}	Non-Repetitive Surge Forward Current	T _J =45°C, t=10ms, 50Hz, Sine	300	A
P _D	Power Dissipation		156	W
T _J	Junction Temperature		-40 to +150	°C
T _{STG}	Storage Temperature Range		-40 to +150	°C
Torque	Module-to-Sink	Recommended (M3)	1.1	N·m
R _{θJC}	Thermal Resistance	Junction-to-Case	0.8	°C /W
Weight			6.0	g

ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{RM}	Reverse Leakage Current	V _R =600V	--	--	15	μA
		V _R =600V, T _J =125°C	--	--	250	μA
V _F	Forward Voltage	I _F =30A	1.3	1.7	2.1	V
		I _F =30A, T _J =125°C	--	1.65	--	V
t _{rr}	Reverse Recovery Time	I _F =1A, V _R =30V, di _F /dt=-200A/μs	--	22	--	ns
t _{rr}	Reverse Recovery Time	V _R =300V, I _F =30A di _F /dt=-200A/μs, T _J =25°C	--	35	--	ns
I _{RRM}	Max. Reverse Recovery Current		--	2.5	--	A
t _{rr}	Reverse Recovery Time	V _R =300V, I _F =30A di _F /dt=-200A/μs, T _J =125°C	--	110	--	ns
I _{RRM}	Max. Reverse Recovery Current		--	7.0	--	A

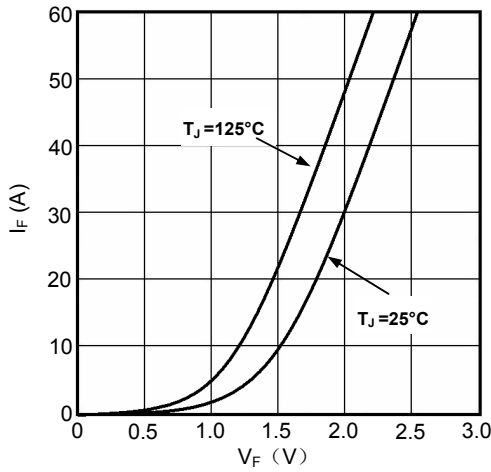


Fig1. Forward Voltage Drop vs Forward Current

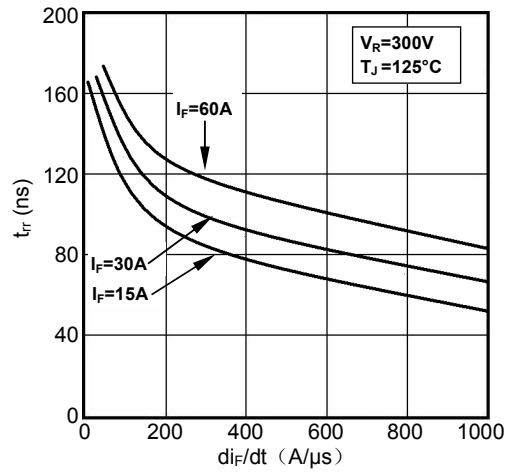


Fig2. Reverse Recovery Time vs di_F/dt

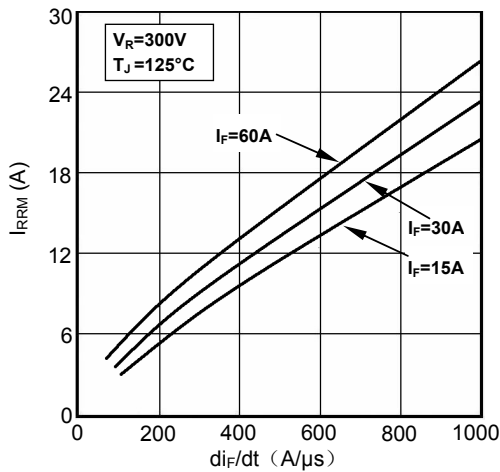


Fig3. Reverse Recovery Current vs di_F/dt

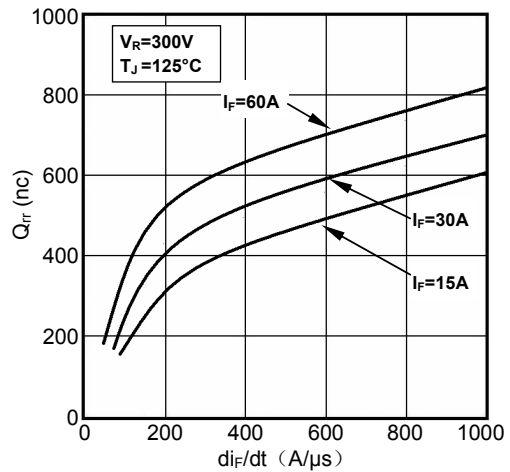


Fig4. Reverse Recovery Charge vs di_F/dt

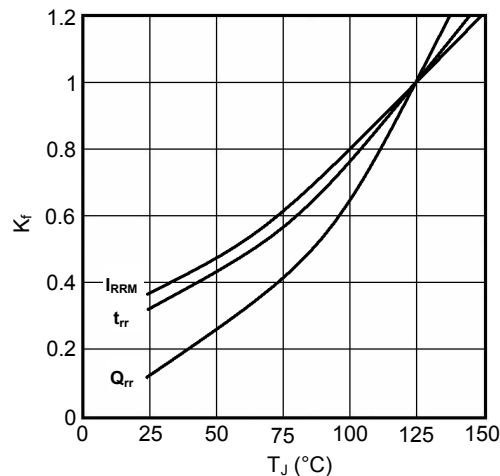


Fig5. Dynamic Parameters vs Junction Temperature

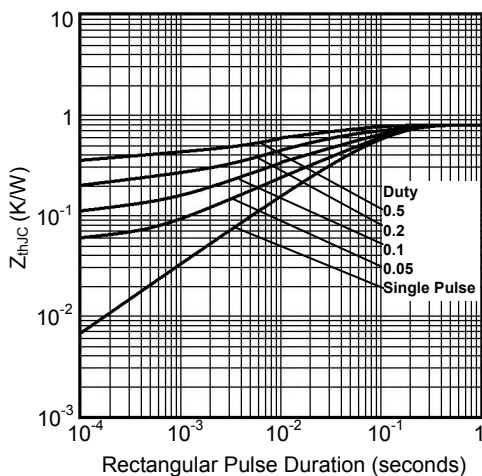


Fig6. Transient Thermal Impedance

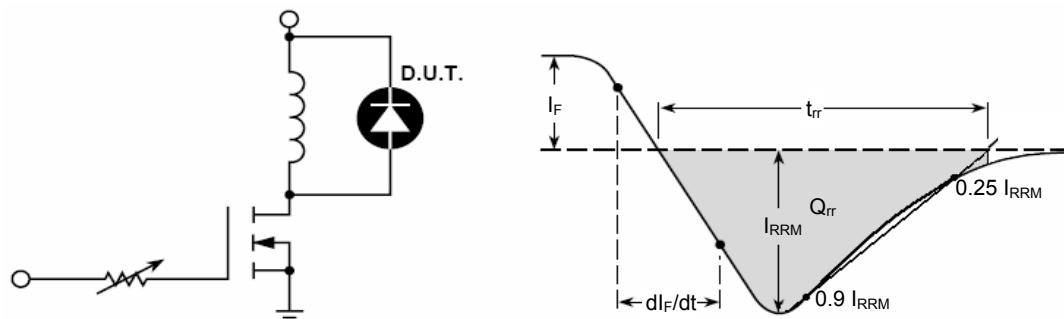
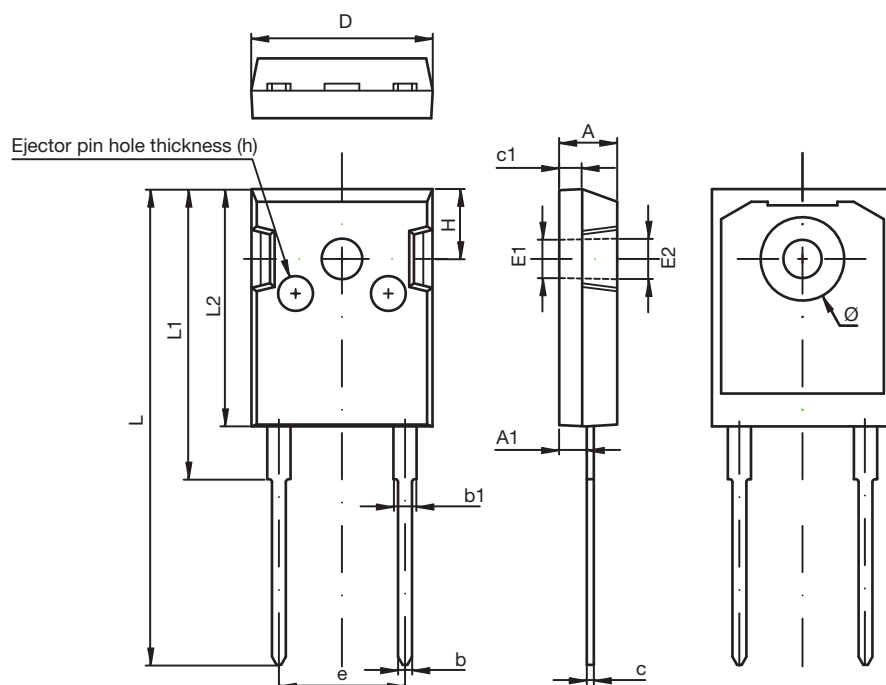


Fig7. Diode Reverse Recovery Test Circuit and Waveform



TO-247-2L DIMENSIONS

SYMBOL	DIMENSIONS IN MILLIMETERS		DIMENSIONS IN INCHES	
	MIN.	MAX.	MIN.	MAX.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 Ref.		0.138 Ref.	
E2	3.600 Ref.		0.142 Ref.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Ø	7.100	7.300	0.280	0.287
e	10.900 Typ.		0.429 Typ.	
H	5.980 Typ.		0.235 Typ.	
h	0.000	0.300	0.000	0.012