THINKI SEMICONDUCTOR ®

Pb Free Plating Product

DSEK60-02A

RoHS Pb

60.0 Ampere,200 Volt Common Cathode Fast Recovery Epitaxial Diode

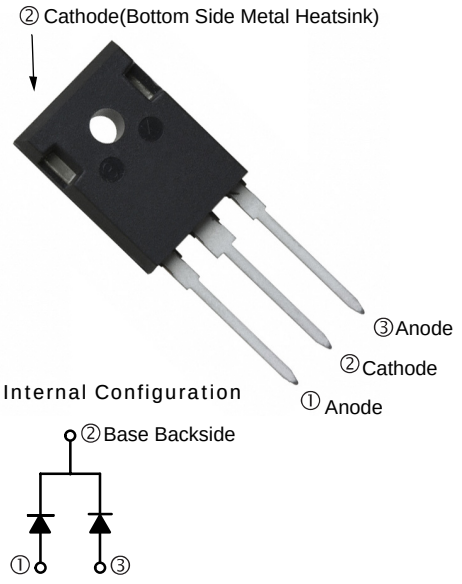
APPLICATION

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS

PRODUCT FEATURE

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

TO-247AD



GENERAL DESCRIPTION

DSEK60-02A using the lastest FRED FAB process(planar passivation chip) 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		200	V
V_{RRM}	Maximum Repetitive Reverse Voltage		200	V
$I_{F(AV)}$	Average Forward Current	T_C=100°C, Per Diode	30	A
		T_C=100°C, Per Package	60	A
$I_{F(RMS)}$	RMS Forward Current	T_C=100°C, Per Diode	53	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
$R_{\theta JC}$	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=200V	--	--	25	μA
		V_R=200V, T_J=125°C	--	--	250	μA
V_F	Forward Voltage	I_F=30A	--	0.86	1.1	V
		I_F=30A, T_J=125°C	--	--	0.95	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=100V, I_F=30A	--	26	--	ns
I_{RRM}	Max. Reverse Recovery Current	di_F/dt=-200A/μs, T_J=25°C	--	2.3	--	A
t_{rr}	Reverse Recovery Time	V_R=100V, I_F=30A	--	40	--	ns
I_{RRM}	Max. Reverse Recovery Current	di_F/dt=-200A/μs, T_J=125°C	--	4.1	--	A

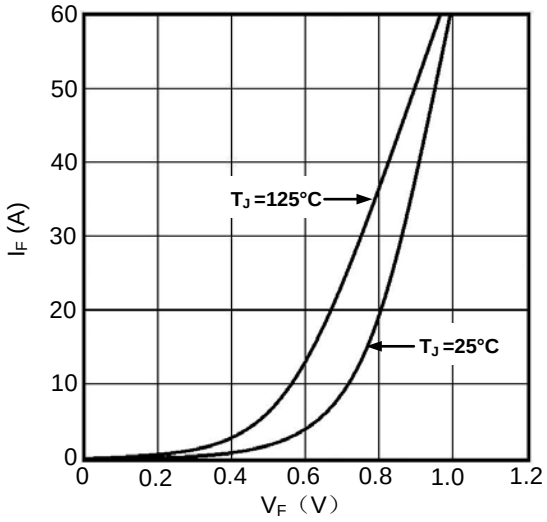


Fig1. Forward Voltage Drop vs Forward Current

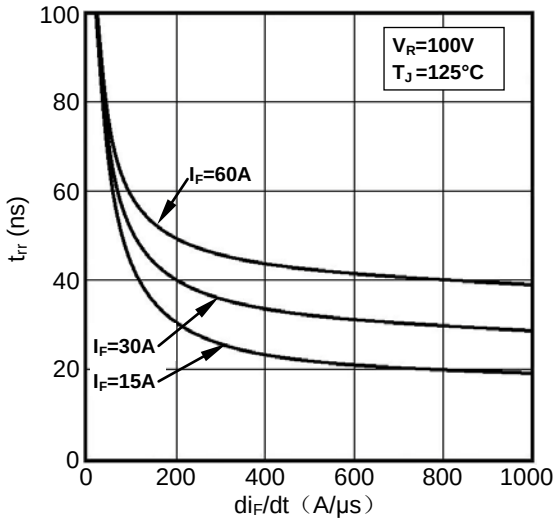


Fig2. Reverse Recovery Time vs di_F/dt

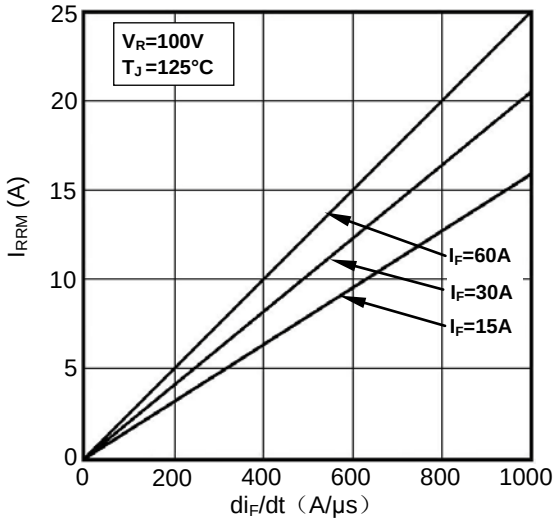


Fig3. Reverse Recovery Current vs di_F/dt

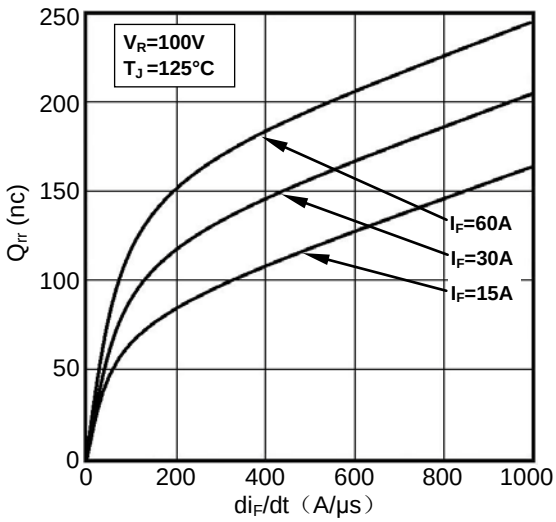


Fig4. Reverse Recovery Charge vs di_F/dt

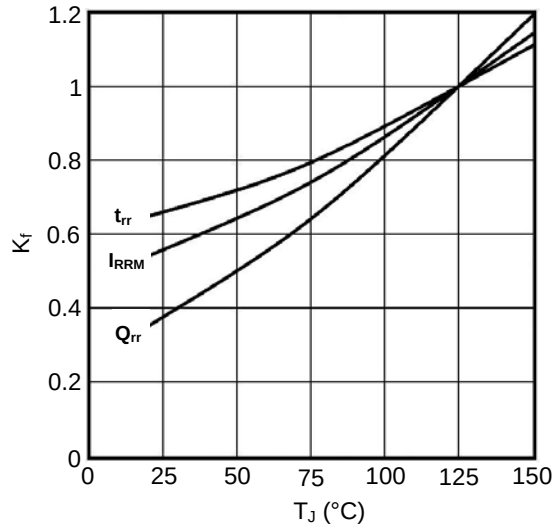


Fig5. Dynamic Parameters vs Junction Temperature

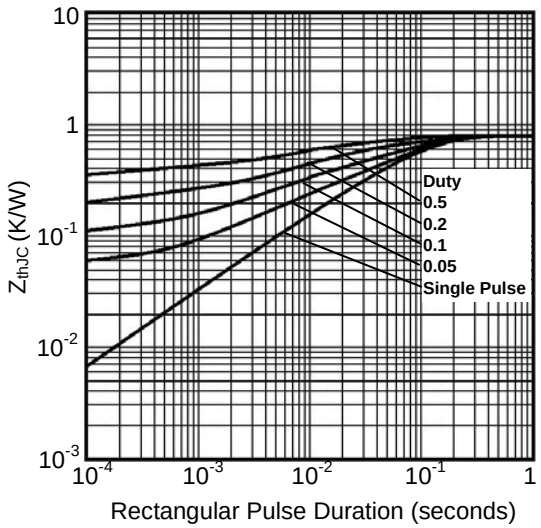


Fig6. Transient Thermal Impedance

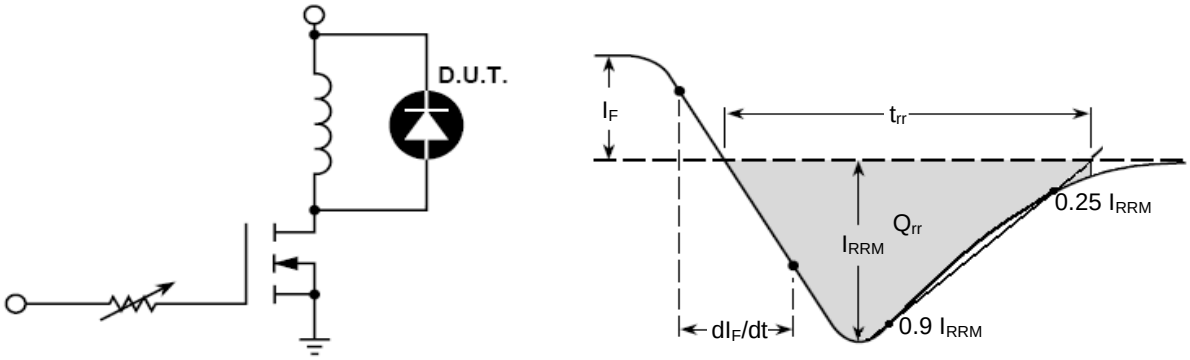
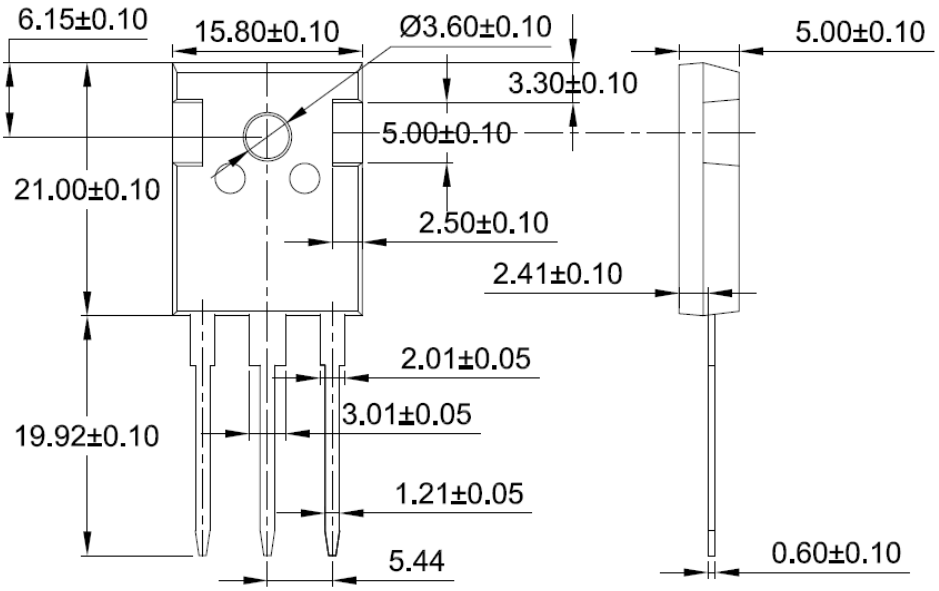
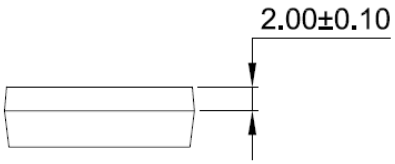


Fig7. Diode Reverse Recovery Test Circuit and Waveform





Dimensions in Millimeters
Fig8. Package Outline