DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

DC 30FR060P

TECHNICAL SPECIFICATIONS OF FAST RECOVERY EPITAXIAL DIODE

VOLTAGE RANGE - 600 Volts *CURRENT - 30 Amperes*

FEATURES

* Ultra fast recovery time
* Low forward voltage drop
* High surge current capability
* Soft recovery characteristic
* Low recovery loss

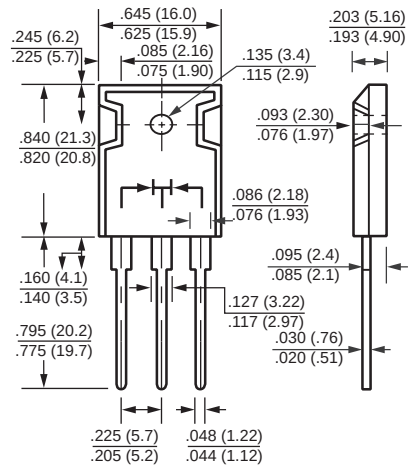
MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Lead: MIL-STD-202E, Method 208 guaranteed
* Polarity: As marked
* Mounting position: Any
* Weight: 5.60 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

TO-3P



Dimensions in inches and (millimeters)

PARAMETER		SYMBOL	DC30FR060P	UNITS
Maximum Recurrent Peak Reverse Voltage		V_{RRM}	600	Volts
Average Forward Rectified Current at T_J = 110°C	Per leg	I_O	15	Amps
	Per device		30	
Non-Repetitive Surge Forward Current T_P = 10ms (50HZ) Sine Wave		I_{FSM}	180	Amps
Avalanche Energy with Single Pulse (L = 40mH)		E_{AS}	120	mJ
Maximum Power Dissipation		P_D	110	W
Junction-to-Case Thermal Resistance		$R_{\theta JA}$	1.1	°C/W
Junction-to-Ambient Thermal Resistance		$R_{\theta JC}$	40	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

RATING AND CHARACTERISTIC CURVES (DC30FR060P)

PARAMETER		SYMBOL	Min.	Typ.	Max.	UNITS
Minimum Breakdown Voltage IR = 100μA		V_{BR}	600	-	-	Volts
Maximum Instantaneous Forward Voltage I_F = 15A	@T_J = 25°C	V_F	-	1.3	1.8	Volts
	@T_J = 125°C		-	1.1	1.5	
Maximum DC Reverse Current at Rated DC Blocking Voltage	@T_J = 25°C	I_R	-	-	10	μAmps
	@T_J = 125°C		-	-	250	
Reverse Recovery Time I_F = 1A, V_R = 30V, dI_F/dt = -200A/μs		T_{RR}	-	20	28	nS
Reverse Recovery Time I_F = 15A, V_R = 300V, dI_F/dt = -200A/μs	@T_J = 25°C	T_{RR}	-	28	-	nS
	@T_J = 125°C		-	72	-	
Reverse Recovery Time I_F = 15A, V_R = 300V, dI_F/dt = -200A/μs	@T_J = 25°C	I_{RRM}	-	3.6	-	Amps
	@T_J = 125°C		-	8.2	-	
Reverse Recovery Time I_F = 15A, V_R = 300V, dI_F/dt = -200A/μs	@T_J = 25°C	Q_{rr}	-	50	-	nC
	@T_J = 125°C		-	295	-	

FIG. 1 - AVERAGE FORWARD CURRENT vs. MAXIMUM ALLOWABLE CASE TEMPERATURE

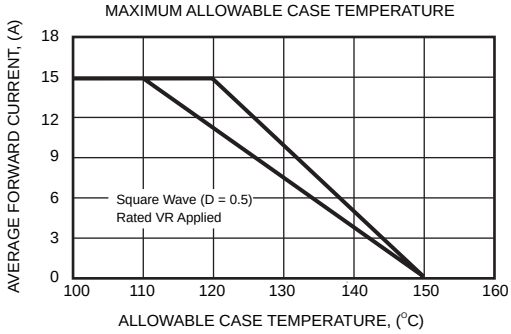


FIG. 2 - TYPICAL FORWARD VOLTAGE DROP CHARACTERISTICS

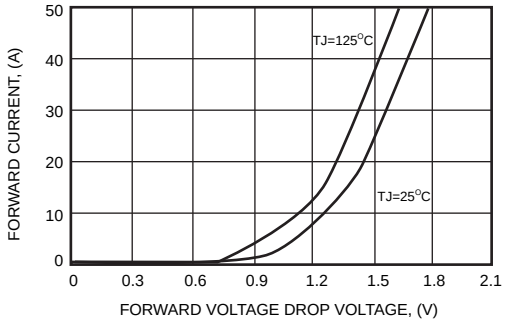


FIG. 3 - TYPICAL VALUE OF REVERSE CURRENT vs. REVERSE VOLTAGE

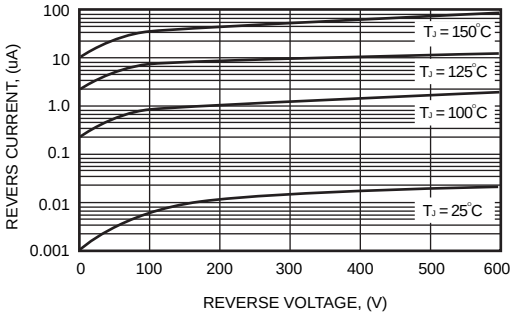


FIG. 4 - TYPICAL JUNCTION CAPACITANCE vs. REVERSE VOLTAGE