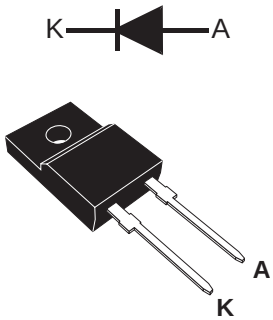
DTV1500LFP

(CRT HORIZONTAL DEFLECTION) HIGH VOLTAGE DAMPER DIODE

MAIN PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	**4 A**
V_{RRM}	**1500 V**
V_F **(max)**	**1.5 V**
trr (max)	**170 ns**



TO-220FPAC
DTV1500LFP

FEATURES AND BENEFITS

- High breakdown voltage capability
- High frequency operation
- Specified turn on switching characteristics
- Very fast recovery diode
- Low static and peak forward voltage drop for low dissipation
- Insulated package: TO-220FPAC
  Insulating voltage = 2000V DC
  Capacitance = 12pF
- Planar technology allowing high quality and best electrical characteristics

DESCRIPTION

High voltage diode especially designed for horizontal deflection stage in standard and high resolution displays for TV's and monitors.

This device is packaged in TO-220FPAC (insulated package).

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		1500	V
$I_{F(RMS)}$	RMS forward current		15	A
I_{FSM}	Surge non repetitive forward current	tp = 10ms sinusoidal	50	A
T_{stg}	Storage temperature		- 65 to 150	°C
T_j	Maximum operating junction temperature		150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to Case thermal resistance	5.8	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Value			Unit
				Min	Typ	Max	
I_R *	Reverse leakage current	V_R = 1500V	Tj = 25°C			100	µA
			Tj = 125°C		100	1000	µA
V_F **	Forward voltage drop	I_F = 4A	Tj = 25°C		1.2	1.7	V
			Tj = 125°C		1.1	1.5	

pulse test : * tp = 5 ms , δ < 2%
** tp = 380 µs, δ < 2%

RECOVERY CHARACTERISTICS

Symbol	Parameter	Test Conditions		Value			Unit
				Min	Typ	Max	
t_{rr}	Reverse recovery time	Tj = 25°C	I_F = 1 A dI_F/dt = -50A/µs V_R = 30V		130	170	ns
t_{rr}	Reverse recovery time	Tj = 25°C	I_F = 100mA I_R = 100mA I_{RR} = 10mA		850		ns

TURN-ON SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions		Value			Unit
				Min	Typ	Max	
t_{fr}	Forward recovery time	Tj = 100°C	I_F = 4 A dI_F/dt = 80 A/µs V_{FR} = 3 V			450	ns
		Tj = 25°C	I_F = 6.5A dI_F/dt = 50 A/µs V_{FR} = 3V			450	
V_{Fp}	Peak forward voltage	Tj = 100°C	I_F = 4A dI_F/dt = 80 A/µs		28	36	V
		Tj = 25°C	I_F =6.5A dI_F/dt = 50 A/µs		13	17	

To evaluate the maximum conduction losses use the following equation :

$P = 1.2 \times I_{F(AV)} + 0.075 \times I_F{}^2{}_{(RMS)}$

Fig. 1: Power dissipation versus peak forward current (triangular waveform, $\delta = 0.45$)

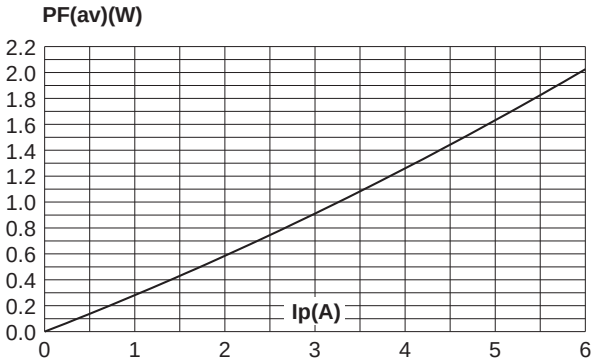


Fig. 2: Average forward current versus ambient temperature

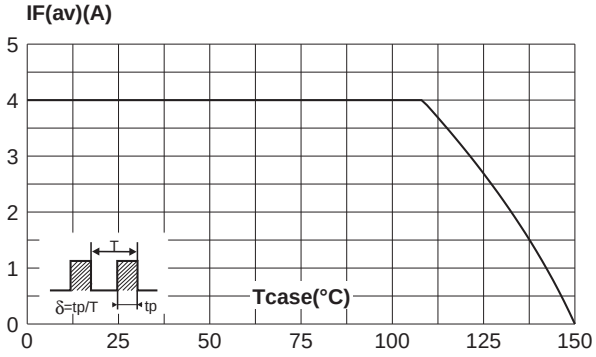


Fig. 3: Forward voltage drop versus forward curent

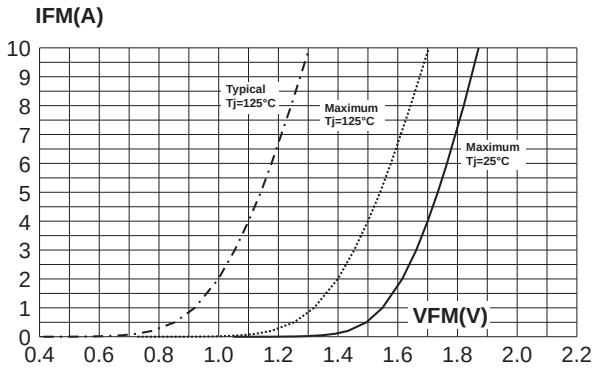


Fig. 4: Non repetitive surge peak forward current versus overload duration

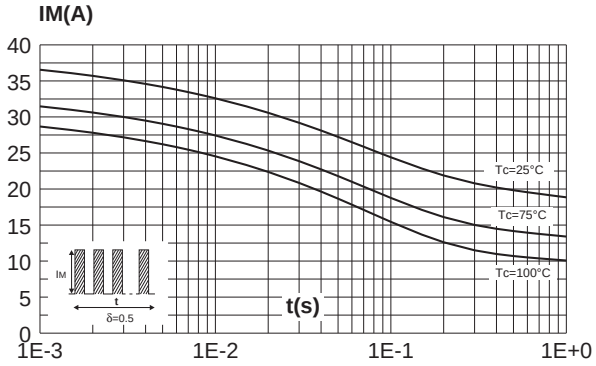


Fig. 5: Reverse recovery charges versus dIF/dt

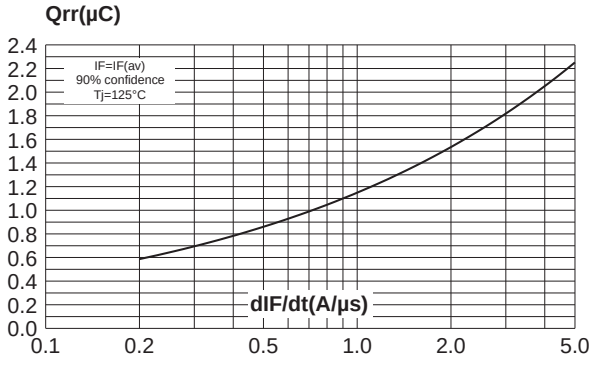


Fig. 6: Reverse recovery current versus dIF/dt

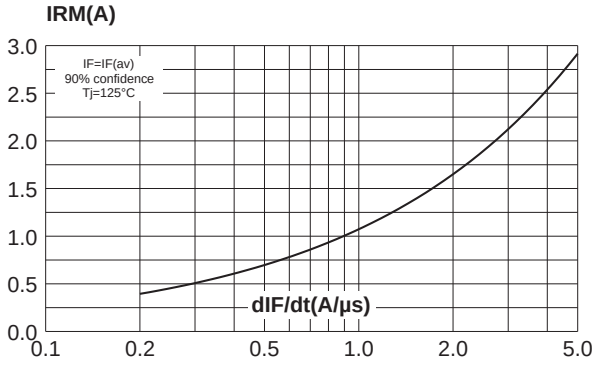


Fig. 7: Transient peak forward voltage versus dIF/dt

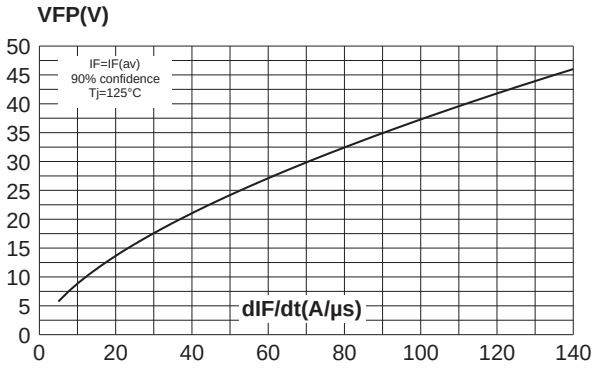


Fig. 8: Forward recovery time versus dIF/dt

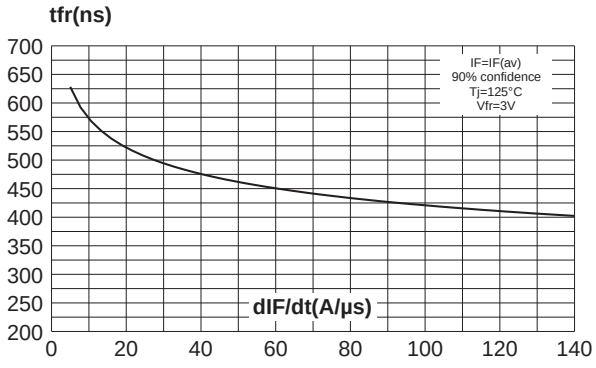


Fig. 9: Dynamic parameters versus junction temperature

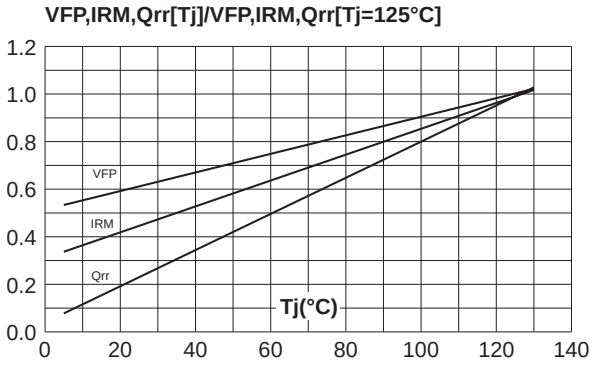


Fig. 10: Junction capacitance versus reverse voltage applied (typical values)

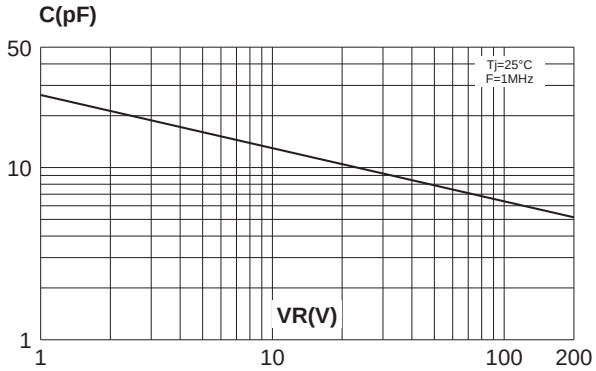
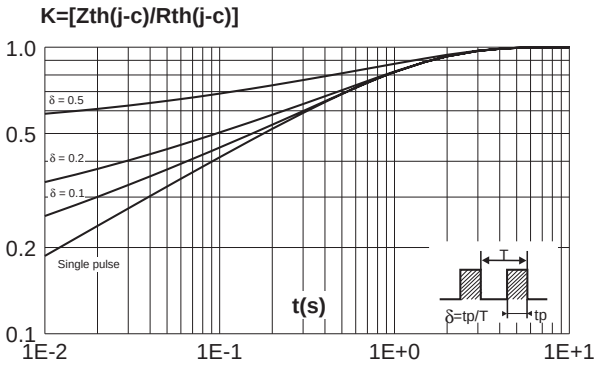
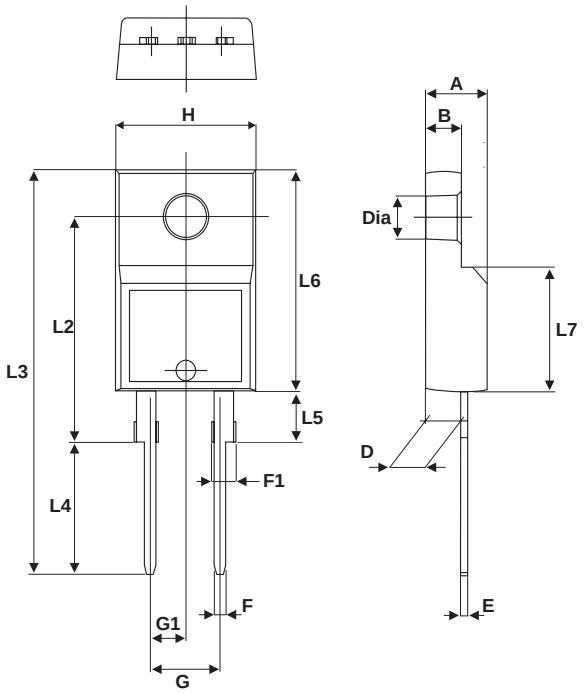


Fig. 11: Relative variation of thermal impedance junction to case versus pulse duration



PACKAGE DATA

TO-220FPAC



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.173	0.181
B	2.5	2.7	0.098	0.106
D	2.5	2.75	0.098	0.108
E	0.45	0.70	0.018	0.027
F	0.75	1	0.030	0.039
F1	1.15	1.70	0.045	0.067
G	4.95	5.20	0.195	0.205
G1	2.4	2.7	0.094	0.106
H	10	10.4	0.393	0.409
L2	16 Typ.		0.63 Typ.	
L3	28.6	30.6	1.126	1.205
L4	9.8	10.6	0.386	0.417
L5	2.9	3.6	0.114	0.142
L6	15.9	16.4	0.626	0.646
L7	9.00	9.30	0.354	0.366
Dia.	3.00	3.20	0.118	0.126

Type	Marking	Package	Weight	Base qty	Delivery mode
DTV1500LFP	DTV1500LFP	TO-220FPAC	1.8g	50	Tube

- Cooling method: C
- Epoxy meets UL94-V0
- Torquevalue: 0.55 m.Ntyp (0.7m.Nmax)
- Electrical Isolation: 2000V DC
- Capacitance: 12pF