

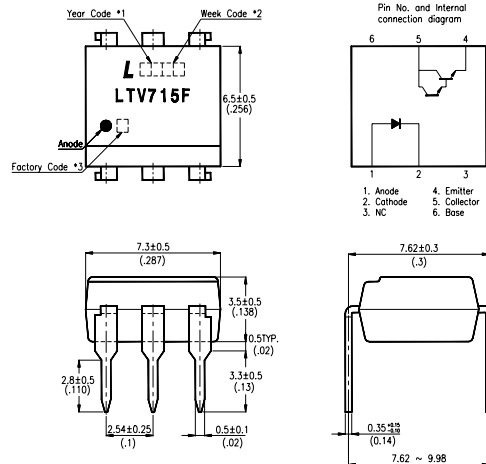
Features

- Low collector dark current
(I_{CEO} : MAX. 10^{-6} A at $V_{CE} = 10V$)
- Current transfer ratio
(CTR : MIN. 600% at $I_F = 1mA$, $V_{CE} = 2V$)
- High input-output isolation voltage
($V_{ISO} = 5,000V_{rms}$)
- Response time
(t_r : TYP. $60 \mu s$ at $V_{CE} = 2V$, $I_C = 10mA$, $R_L = 100 \Omega$)
- UL approved (No. E113898)
- CSA approved (No. CA91533-1)
- FIMKO approved (No. 202944)
- NEMKO approved (No. P98101737)
- DEMKO approved (No. 307925)
- SEMKO approved (No. 9833170/01)
- VDE approved (No. 094722)
- Options Available :
 - Leads with 0.4" (10.16mm) Spacing (M Type)
 - Lead Bends for Surface Mounting (S Type)
 - Tape and Reel of Type I for SMD (Add "-TA" Suffix)
 - Tape and Reel of Type II for SMD (Add "-TA1" Suffix)
 - VDE 0884 Approvals (Add "-V" Suffix)

Applications

1. System appliances, measuring instruments
2. Copiers, automatic vending machines
3. Signal transmission between circuits of different potentials and impedances

Package Dimensions



NOTES :

1. Year date code.
2. 2-digit work week.
3. Factory code shall be marked (Z : Taiwan, Y : Thailand).
4. All dimensions are in millimeters (inches).
5. Tolerance is $\pm 0.25mm$ (.010") unless otherwise noted.
6. Specifications are subject to change without notice.

Ordering Information

Part Number	Package	Safety Standard Approval	Application part number
LTV-715F LTV-715FM LTV-715FS LTV-715FS-TA LTV-715FS-TA1	6-pin DIP 6-pin (leads with 0.4" spacing) 6-pin (lead bends for surface mount) 6-pin (tape and reel packaging of type I) 6-pin (tape and reel packaging of type II)	<ul style="list-style-type: none"> • UL approved • CSA approved • FIMKO approved • NEMKO approved • DEMKO approved • SEMKO approved 	LTV - 715F
LTV715F-V LTV715FM-V LTV715FS-V LTV715FSTA-V LTV715FSTA1-V	6-pin DIP 6-pin (leads with 0.4" spacing) 6-pin (lead bends for surface mount) 6-pin (tape and reel packaging of type I) 6-pin (tape and reel packaging of type II)	<ul style="list-style-type: none"> • VDE approved 	LTV - 715F

Ratings and Characteristics Absolute Maximum Ratings

(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I _F	50	mA
	Reverse Voltage	V _R	6	V
	Power Dissipation	P	70	mW
Output	Collector-Emitter Voltage	V _{CEO}	35	V
	Emitter-Collector Voltage	V _{ECO}	6	V
	Collector Current	I _C	80	mA
	Collector Power Dissipation	P _C	150	mW
Total Power Dissipation		P _{tot}	170	mW
Operating Temperature		V _{iso}	5,000	V _{rms}
Storage Temperature		T _{opr}	-25~+100	°C
*1.Isolation Voltage		T _{stg}	-40~+125	°C
*2.Soldering Temperature		T _{sol}	260	°C

*1. AC for 1 minute, R.H. = 40 ~ 60%

Isolation voltage shall be measured using the following method.

- (1) Short between anode and cathode on the primary side and between collector and emitter on the secondary side.
- (2) The isolation voltage tester with zero-cross circuit shall be used.
- (3) The waveform of applied voltage shall be a sine wave.

*2. For 10 seconds

Electrical / Optical Characteristics

(Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V _F	—	1.2	1.4	V	I _F =10mA
	Reverse Current	I _R	—	—	10	μA	V _R =4V
	Terminal Capacitance	C _t	—	30	250	pF	V=0, f=1KHz
Output	Collector Dark Current	I _{CEO}	—	—	10 ⁻⁶	A	V _{CE} =10V, I _F =0
	Collector-Emitter Breakdown Voltage	BV _{CEO}	35	—	—	V	I _C =0.1mA I _F =0
	Emitter-Collector Breakdown Voltage	BV _{ECO}	6	—	—	V	I _E =10 μA I _F =0
Transfer Characteristics	Collector Current	I _C	6	—	75	mA	I _F =1mA
	*1 Current Transfer Ratio	CTR	600	—	7500	%	V _{CE} =2V
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	—	1	V	I _F =20mA I _C =5mA
	Isolation Resistance	R _{iso}	5 × 10 ¹⁰	1 × 10 ¹¹	—	Ω	DC500V 40~60%R.H.
	Floating Capacitance	C _f	—	0.6	1	pF	V=0, f=1MHz
	Cut-off Frequency	f _c	—	6	—	KHz	V _{CE} =2V, I _C =2mA R _L =100 Ω, -3dB
	Response Time (Rise)	t _r	—	60	250	μs	V _{CE} =2V, I _C =10mA R _L =100 Ω
Response Time (Fall)	t _f	—	53	250	μs		

*1 CTR= $\frac{I_C}{I_F} \times 100\%$

Typical Electrical/Optical Characteristic Curves (25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Forward Current vs. Ambient Temperature

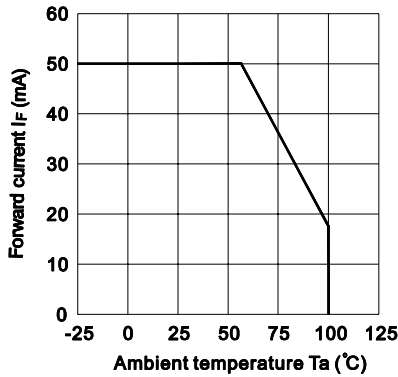


Fig.2 Collector Power Dissipation vs. Ambient Temperature

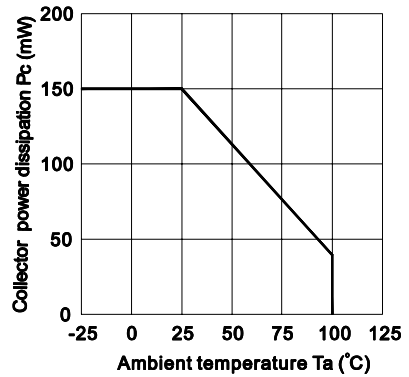


Fig.3 Current Transfer Ratio vs. Forward Current

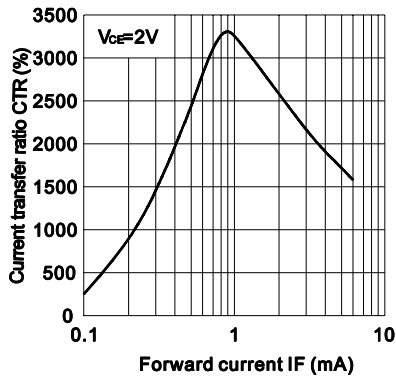


Fig.4 Forward Current vs. Forward Voltage

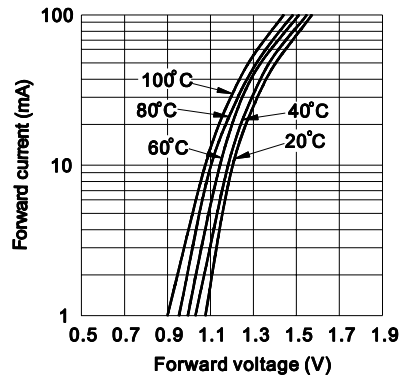


Fig.5 Collector Current vs. Collector-emitter Voltage

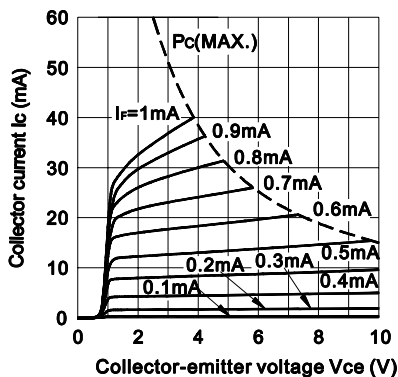


Fig.6 Collector Current vs. Collector-emitter Voltage

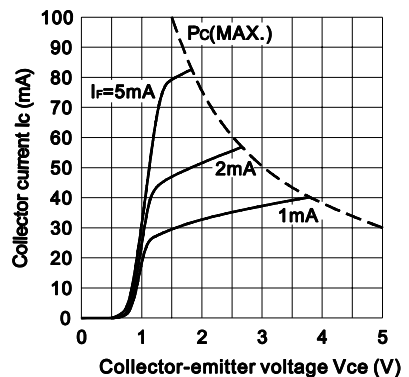


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

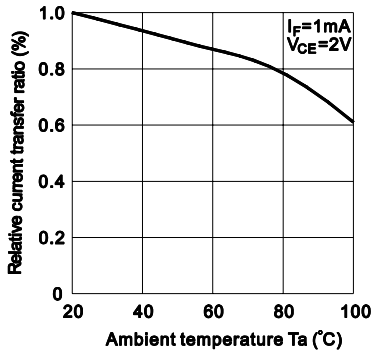


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

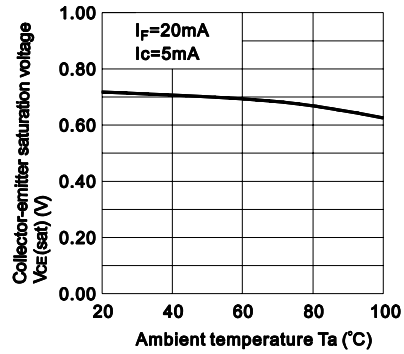


Fig.9 Collector Dark Current vs. Ambient Temperature

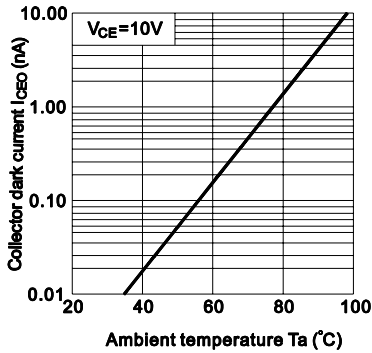


Fig.10 Response Time vs. Load Resistance

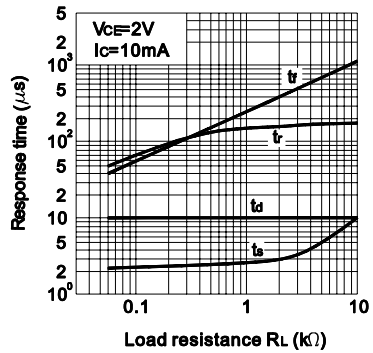
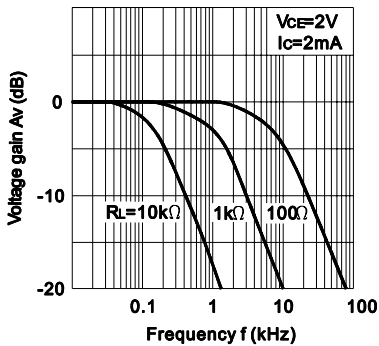
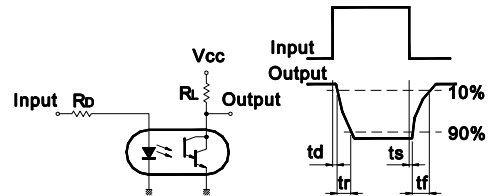


Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

