



ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
INPUT				
Reverse voltage		V_R	6	V
DC forward current		I_F	60	mA
Surge forward current	$t \leq 10\text{ }\mu\text{s}$	I_{FSM}	2.5	A
Power dissipation		P_{diss}	70	mW
OUTPUT				
Collector emitter breakdown voltage		BV_{CEO}	70	V
Collector current		I_C	50	mA
Collector peak current	$t_p/T = 0.5, t_p \leq 10\text{ ms}$	I_{CM}	100	mA
Output power dissipation		P_{diss}	150	mW
COUPLER				
Isolation test voltage between emitter and detector	$t = 1\text{ min}$	V_{ISO}	5000	V_{RMS}
Creepage distance			≥ 7	mm
Clearance distance			≥ 7	mm
Isolation thickness between emitter and detector			≥ 0.4	mm
Comparative tracking index per DIN IEC 112/VDE 0303, part 1			≥ 175	
Isolation resistance	$V_{IO} = 500\text{ V}$	R_{IO}	$\geq 10^{11}$	Ω
Storage temperature range		T_{stg}	- 55 to + 150	$^{\circ}\text{C}$
Ambient temperature range		T_{amb}	- 55 to + 110	$^{\circ}\text{C}$
Junction temperature		T_j	100	$^{\circ}\text{C}$
Soldering temperature ⁽¹⁾	2 mm from case, $\leq 10\text{ s}$	T_{sld}	260	$^{\circ}\text{C}$
Total power dissipation		P_{diss}	220	mW

Notes

- Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute maximum ratings for extended periods of the time can adversely affect reliability.
- Refer to reflow profile for soldering conditions for surface mounted parts (SMD). Refer to wave profile for soldering conditions for through hole parts (DIP).

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT							
Forward voltage	$I_F = 60\text{ mA}$		V_F		1.39	1.65	V
Breakdown voltage	$I_R = 10\text{ }\mu\text{A}$		V_{BR}	6			V
Reverse current	$V_R = 6\text{ V}$		I_R		0.01	10	μA
Capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$		C_O		25		pF
OUTPUT							
Collector emitter capacitance	$V_{CE} = 5\text{ V}, f = 1\text{ MHz}$		C_{CE}		5.2		pF
Base collector capacitance	$V_{CE} = 5\text{ V}, f = 1\text{ MHz}$		C_{BC}		6.5		pF
Emitter base capacitance	$V_{CE} = 5\text{ V}, f = 1\text{ MHz}$		C_{EB}		7.5		pF
COUPLER							
Collector emitter, saturation voltage	$I_F = 10\text{ mA}, I_C = 2.5\text{ mA}$		V_{CEsat}		0.25	0.4	V
Coupling capacitance			C_C		0.6		pF
Collector emitter, leakage current	$V_{CE} = 10\text{ V}$	CNY17F-1	I_{CEO}		2	50	nA
		CNY17F-2	I_{CEO}		2	50	nA
		CNY17F-3	I_{CEO}		5	100	nA
		CNY17F-4	I_{CEO}		5	100	nA

Note

- Minimum and maximum values were tested requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information only and are not part of the testing requirements.



CURRENT TRANSFER RATIO ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
I_C/I_F	$I_F = 10\text{ mA}$	CNY17F-1	CTR	40		80	%
		CNY17F-2	CTR	63		125	%
		CNY17F-3	CTR	100		200	%
		CNY17F-4	CTR	160		320	%
	$I_F = 1\text{ mA}$	CNY17F-1	CTR	13	30		%
		CNY17F-2	CTR	22	45		%
		CNY17F-3	CTR	34	70		%
		CNY17F-4	CTR	56	90		%

Note

- Current transfer ratio I_C/I_F at $V_{CE} = 5\text{ V}$, $25\text{ }^{\circ}\text{C}$ and collector emitter leakage current by dash number.

SWITCHING CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
LINEAR OPERATION (without saturation)							
Turn-on time	$I_F = 10\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 75\text{ }\Omega$		t_{on}		3		μs
Rise time	$I_F = 10\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 75\text{ }\Omega$		t_r		2		μs
Turn-off time	$I_F = 10\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 75\text{ }\Omega$		t_{off}		2.3		μs
Fall time	$I_F = 10\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 75\text{ }\Omega$		t_f		2		μs
Cut-off frequency	$I_F = 10\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 75\text{ }\Omega$		f_{CO}		110		kHz
SWITCHING OPERATION (with saturation)							
Turn-on time	$I_F = 20\text{ mA}$	CNY17F-1	t_{on}		3		μs
	$I_F = 10\text{ mA}$	CNY17F-2	t_{on}		4.2		μs
		CNY17F-3	t_{on}		4.2		μs
		CNY17F-4	t_{on}		6		μs
Rise time	$I_F = 20\text{ mA}$	CNY17F-1	t_r		2		μs
	$I_F = 10\text{ mA}$	CNY17F-2	t_r		3		μs
		CNY17F-3	t_r		3		μs
		CNY17F-4	t_r		4.6		μs
Turn-off time	$I_F = 20\text{ mA}$	CNY17F-1	t_{off}		18		μs
	$I_F = 10\text{ mA}$	CNY17F-2	t_{off}		23		μs
		CNY17F-3	t_{off}		23		μs
		CNY17F-4	t_{off}		25		μs
Fall time	$I_F = 20\text{ mA}$	CNY17F-1	t_f		11		μs
	$I_F = 10\text{ mA}$	CNY17F-2	t_f		14		μs
		CNY17F-3	t_f		14		μs
		CNY17F-4	t_f		15		μs



95 10804-3
Fig. 1 - Test Circuit, Non-Saturated Operation

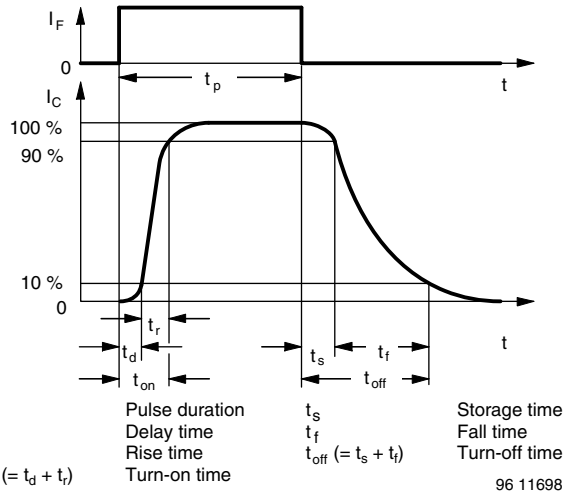
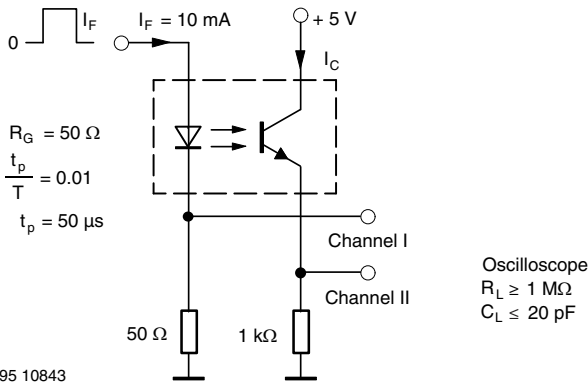


Fig. 3 - Switching Times



95 10843
Fig. 2 - Test Circuit, Saturated Operation

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified)

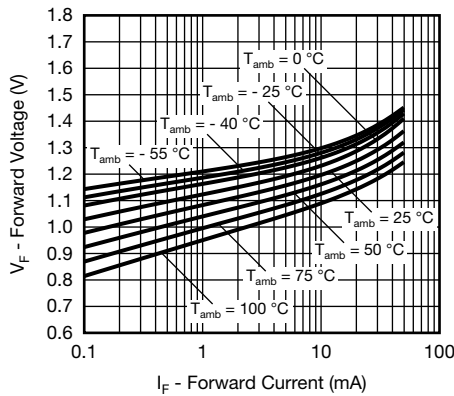


Fig. 4 - Forward Voltage vs. Forward Current

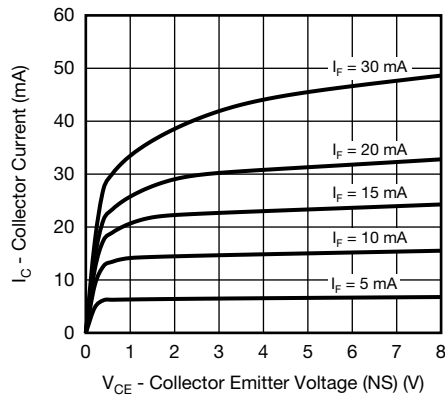


Fig. 5 - Collector Current vs. Collector Emitter Voltage (NS)



Fig. 6 - Collector Current vs. Collector Emitter Voltage (sat)



Fig. 9 - Normalized CTR (sat) vs. Ambient Temperature



Fig. 7 - Leakage Current vs. Ambient Temperature



Fig. 10 - Normalized CTR (NS) vs. Forward Current



Fig. 8 - Normalized CTR (NS) vs. Ambient Temperature



Fig. 11 - Normalized CTR (sat) vs. Forward Current



Fig. 12 - CTR Frequency vs. Phase Angle



Fig. 13 - CTR Frequency vs. Collector Current



Fig. 14 - Switching Time vs. Load Resistance

PACKAGE DIMENSIONS in millimeters

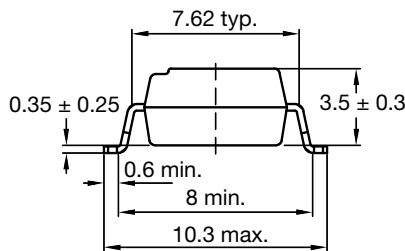


22530

Option 6



Option 7



Option 9



20802-34

PACKAGE MARKING



Notes

- VDE logo is only marked on option 1 parts. Option information is not marked on the part.
- Tape and reel suffix (T) is not part of the package marking.



TUBE AND TAPE INFORMATION

DEVICES PER TUBE			
TYPE	UNITS/TUBE	TUBES/BOX	UNITS/BOX
DIP-6	50	40	2000



Fig. 15 - Tape and Reel Drawing, 1000 Units per Reel



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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.