U 639 B-FP · U 6039 B-FP

TELEFUNKEN ELECTRONIC

TIMER CIRCUIT FOR RELAY CONTROL

T-51-19

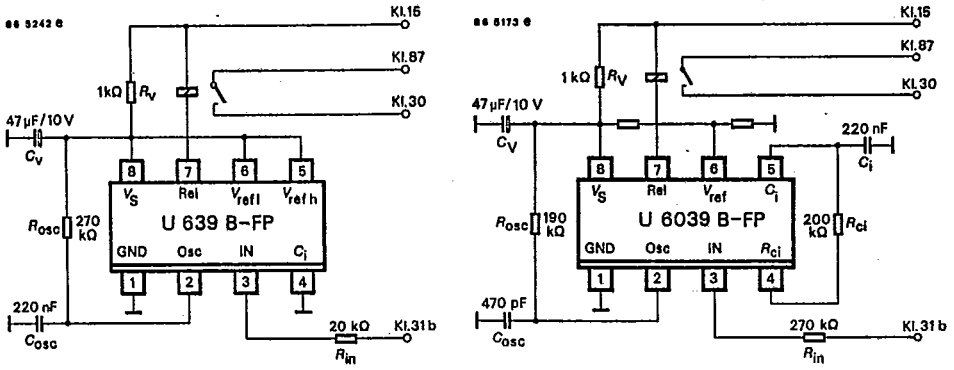
Technology: Bipolar

Features:

- Voltage stabilization
- Relay output with integrated Z-diode limitation
- Digital time sequence across one pin-RC-oscillator
- Low voltage effects a reset pulse
- Relay is switched ON by trigger pulses
- Relay is switched OFF with an external adjustable delay after the last trigger pulse
- Interference protected according to VDE 0839 and load dump protection
- U 639 B-FP: Two adjustable comparator thresholds for hysteresis of motor speed limitation
- U 6039 B-FP: One adjustable comparator threshold and internal hysteresis time for motor speed limitation

Case:

8 pin SO plastic



Pin	Function
1	IC-ground GND
2	RC-oscillator OSC
3	Trigger input IN
4	Integration capacitor C_I
5	Reference voltage high V_{Refh}
6	Reference voltage low V_{Refl}
7	Relay output REL
8	Stab. voltage $V_{Stab} = 7.35$ V

Pin	Function
1	IC-ground GND
2	RC-oscillator OSC
3	Trigger input IN
4	Charge resistor R_{CI}
5	Integration capacitor C_i
6	Reference voltage V_{Ref}
7	Relay output REL
8	Stab. voltage $V_{Stab} = 7.35$ V

Fig. 1 Block diagramms and pin connections

Absolute maximum ratings

Reference point Pin 1 (Ground), see Fig. 1

Supply voltage KI (terminal) 15	V_{Batt}	24		V
Power dissipation				
$T_{amb} = 95$ °C	P_{tot}	340		mW
Ambient temperature range	T_{amb}	−40...+95		°C
Storage temperature range	T_{stg}	−55...+125		°C

Electrical characteristics			**Min.**	**Typ.**	**Max.**	
Reference point Pin 1 (Ground), $T_{amb} = 25$ °C, see Fig. 1, V_{Batt} (KI 15) = 12 V, unless otherwise specified						
Supply voltage KI 15		V_{Batt}	6		16	V
Stabilized voltage						
$R_1 = 500...1200\ \Omega$, $C_1 = 47\ \mu F$	Pin 8	$V_S = V_8$		7.5		V
Low voltage identification	Pin 8	V_8		4.7		V
Supply current						
$V_B = 12$ V, $R_1 = 1$ kΩ	Pin 8	I_8		4.5		mA
$V_B = 6$ V, $R_1 = 1$ kΩ	Pin 8	I_8		1		mA
Load dump protection						
Operating threshold current	Pin 8	I_8		45		mA
Relay output						
Saturation voltage						
$I_7 = 100$ mA		V_7			1	V
$I_7 = 200$ mA		V_7			1.5	V
Z-diode for inductive load		V_7		20		V
Monoflop time, $f_{osc} = 12.3$ kHz		t_7		1		s
Oscillator input	Pin 2					
Switching threshold — High		V_H		4.9		V
— Low		V_L		1.8		V
Discharge resistance (integrated)		R	8	10	12	kΩ
Discharge current $V_2 = 6$ V		I_2		550		µA
Input current $V_2 = 0$ V		$-I_2$			550	nA
RC oscillator		R_{osc}	130	220	1000	kΩ
		C_{osc}		470		pF
					100	µF
Ignition pulse input	Pin 3					
Operation threshold voltage		V_3		1.8		V
Protection diode, $I_5 = 10$ mA		V_3		7.8		V
$I_5 = 10$ mA		$-V_3$		0.75		V
Input resistance		R		10		kΩ
Series resistance, ignition pulse input		R_i	10			kΩ

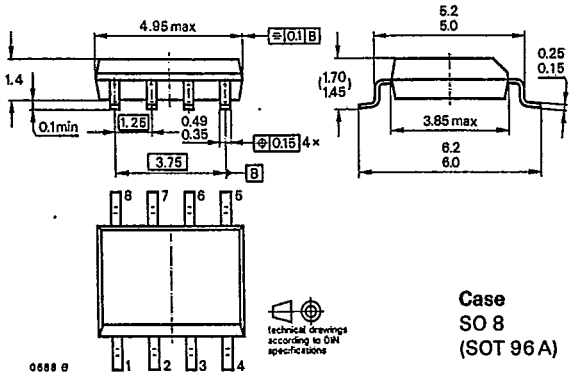
			Min.	Typ.	Max.	
Integration output	Pin 4					
Charge and discharge resistance						
	U 639 B-FP	R_4		210		kΩ
	U 6039 B-FP	R_4		5.6		kΩ
Charge current						
$V_4 = 0$ V	**U 639 B-FP**	$-I_4$		35		µA
	U 6039 B-FP	$-I_4$			100	µA
Discharge current						
$V_4 = V_8$	**U 639 B-FP**	I_4		35		µA
	U 6039 B-FP	I_4			100	µA
External charging resistor	**U 6039 B-FP**	R_{ci}	100	200		kΩ
Monoflop time						
$f_{osc} = 12.3$ kHz		t_4		2.52		ms
Reference inputs	Pin 5 + 6					
Input voltage		V_5, V_6	0		$V_8 - 1.5$	V
Input current $V_5, V_6 = 0$		I_5, I_6			550	nA
Offset voltage:						
Relay = OFF	**U 639 B-FP**	V_{5-4}		12		mV
	U 6039 B-FP	V_{5-6}		12		mV
Relay = ON	**U 639 B-FP**	V_{6-4}		12		mV

U 639 B · U 6039 B-FP

T-51-19

TELEFUNKEN ELECTRONIC

Dimensions in mm



Case
SO 8
(SOT 96 A)