



UU642

Preliminary

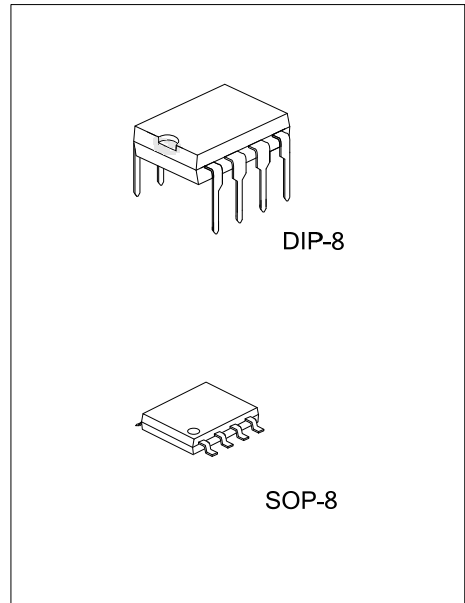
LINEAR INTEGRATED CIRCUIT

INTERVAL AND WIPE/WASH WIPER CONTROL IC

DESCRIPTION

The bipolar integrated circuit UTC **UU642** is designed as a wiper for automotive application. It includes wipe, wash and interval mode.

The UTC **UU642** is a cost-effective solution for an accurate timing function control. Wipe/wash mode has priority over interval mode. Interval pause and after-wiping time can be set to fixed values by using resistors in a broad time range. Added value can be provided with an individual, continuous adjustment of the interval pause by a potentiometer which may be built into the stalk. For proper operation, it is mandatory to feed the signal of the wiper motor's park switch into UTC **UU642**.



FEATURES

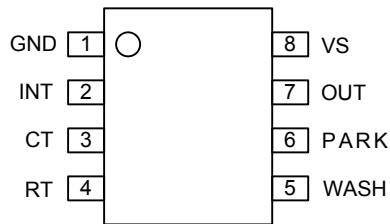
- * After-wiping time: 2s~20s
- * Interval pause: 4s~20s
- * Wipe/wash mode priority
- * Wiper motor's park switch
- * Relay driver with Z-diode
- * One external capacitor determines all time sequences
- * Interference protection according to VDE 0839 or ISO/TR 637/1
- * Load-dump protected

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU642L-D08-T	UU642G-D08-T	DIP-8	Tube
UU642L-S08-T	UU642G-S08-T	SOP-8	Tube
UU642L-S08-R	UU642G-S08-R	SOP-8	Tape Reel

<p>UU642L-D08-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Halogen Free</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) D08: DIP-8, S08: SOP-8</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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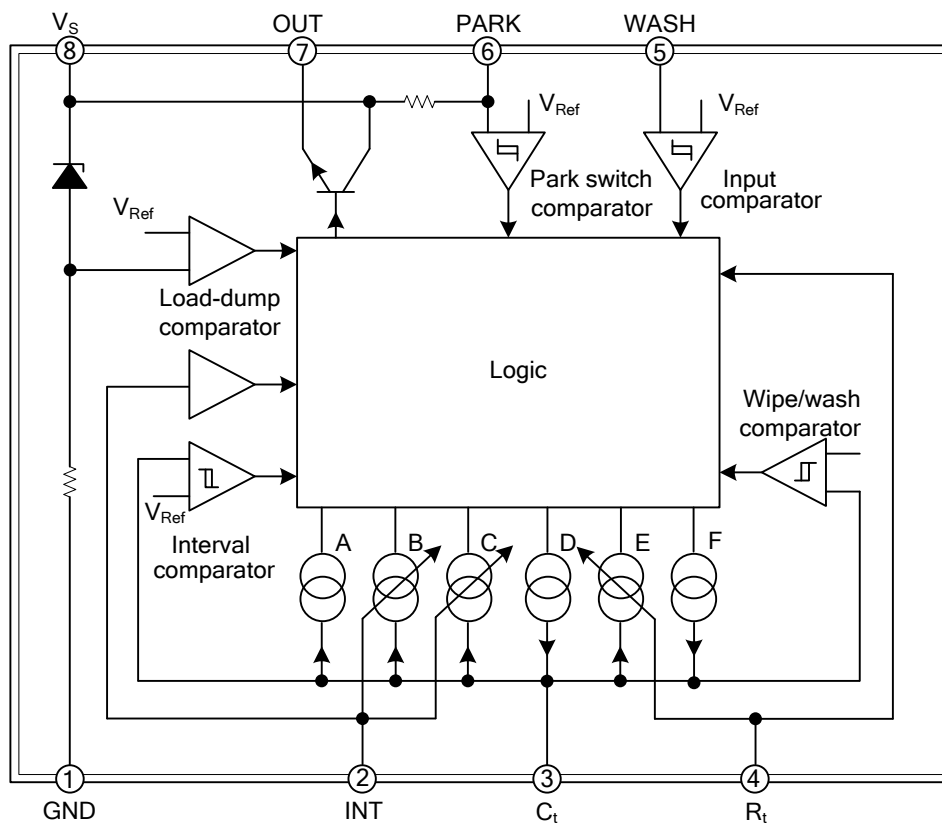
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	GND	Ground
2	INT	Interval switch
3	CT	Timing capacitor C_2
4	RT	After-wiping time resistance
5	WASH	Wipe/wash switch
6	PARK	Park switch for wiper motor
7	OUT	Relay control output
8	VS	Supply voltage terminal 15

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage t=60s, Terminal 15	V_{Batt}	28	V
Supply Current	I_8	t=2ms	1.5
		t=200ms	150
Relay Control Output Current (DC)	I_7	200	mA
Relay Control Output Current (DC) t=200ms		1.2	A
Pulse Current (Control Inputs) t=200ms			
Park Switch, S_1	I_6	50	mA
Wipe/Wash Switch, S_3	I_5	50	mA
Interval Switch, S_2	I_2	50	mA
Power Dissipation $T_{AMB}=90^{\circ}\text{C}$	P_D	500	mW
Ambient Temperature Range	T_A	-40~+85	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~+125	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL RESISTANCE

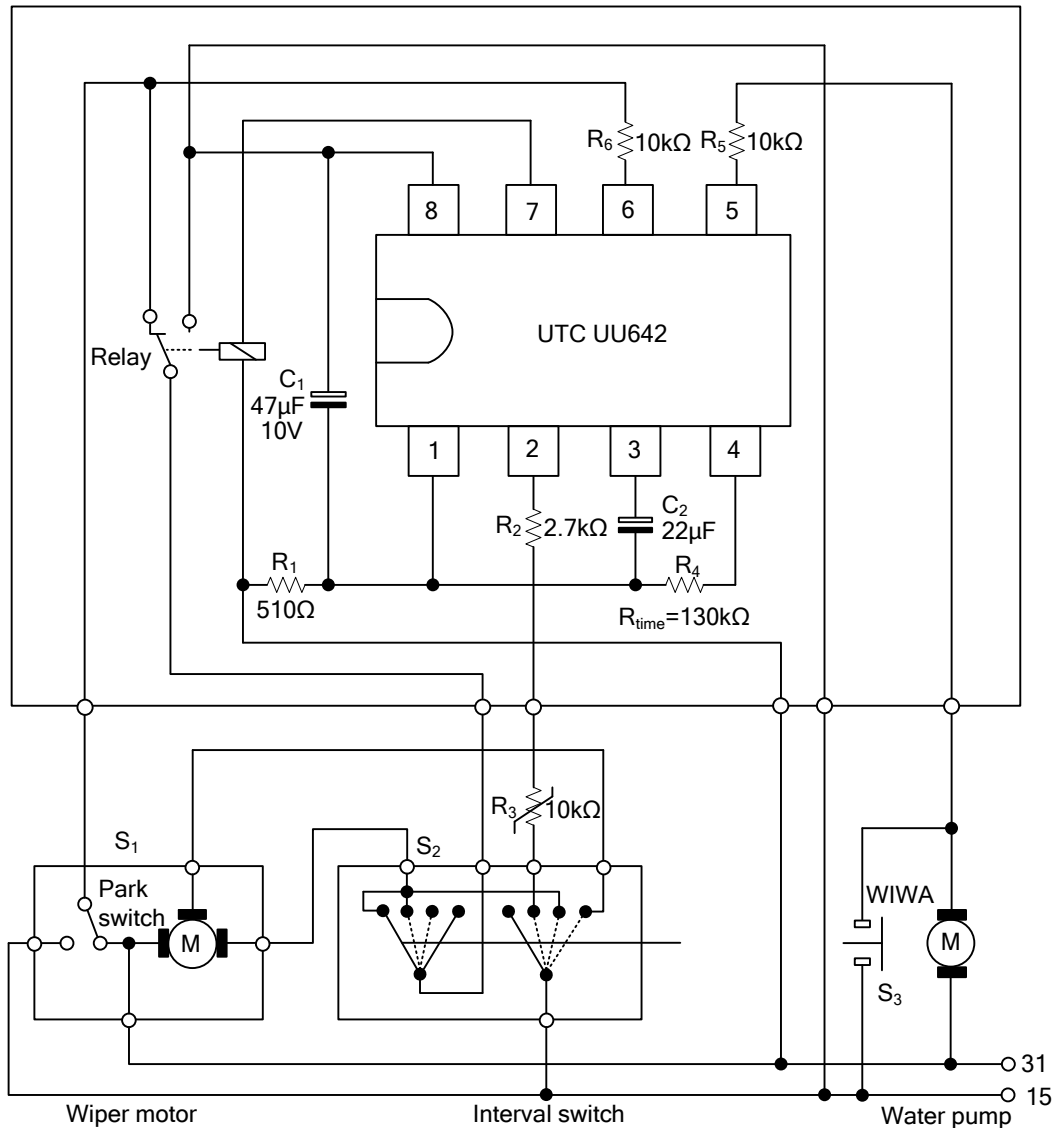
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	DIP-8	120
		SOP-8	160

■ ELECTRICAL CHARACTERISTICS

($V_{Batt}=12V$, $T_A=25^\circ C$, reference point is pin 8, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{Batt}		9		16.5	V
Supply Current	I_8			9		mA
Z-Diode Limitation	V_1			6		V
Overvoltage						
Threshold Current	I_1			-94		mA
Threshold Voltage	V_{Batt}			37		V
Relay Control Output						
Saturation Voltage	V_7	$I_7=100mA$			-1.0	V
		$I_7=200mA$			-1.5	V
Leakage Current	I_7			100		μA
Park Switch						
Internal Pull-Up Resistance	R_6	$R_6=10k\Omega$		41		k Ω
Switching Threshold Voltage	V_6			-3.1		V
Protection Diode	V_6	$I_6=-10mA$		-0.8		V
		$I_6=10mA$		7.6		V
Input C_t						
Internal Resistance	R_3			100		Ω
Interval Input $R_2=2.7\sim 30k\Omega$						
Protection Diode	V_2	$I_2=-10mA$		-0.8		V
		$I_2=30mA/10ms$		5.6		V
WASH Input $R_5=10k\Omega$						
Switching Threshold/Hysteresis	V_5			-1.1/-7.1		V
Protection Diode	V	$I_5=-10mA$		-0.87		V
		$I_5=10mA$		8.7		V
Switching Characteristics $R_4=47k\Omega\sim 300k\Omega$, $I_4=-150\mu A$						
Interval Time	t_2	$R_3=0k\Omega$		3.45		s
		$R_3=10k\Omega$		10.8		s
Prewash Delay	t_{del}			80		ms
After-Wipe-Time	t_5	$R_4=130k\Omega$		4.7		s

■ TYPICAL APPLICATION CIRCUIT



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