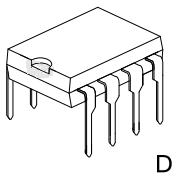
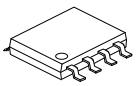
UU642

LINEAR INTEGRATED CIRCUIT

INTERVAL AND WIPE/WASH WIPER CONTROL IC



DIP-8



SOP-8

■ DESCRIPTION

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

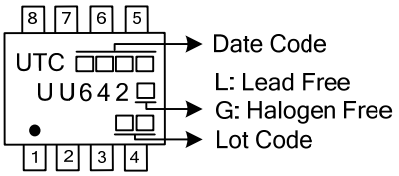
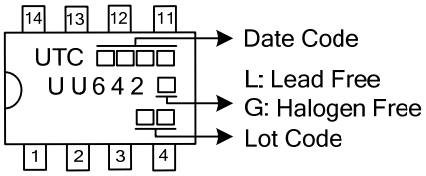
* After-wiping time: 2s~20s
* Interval pause: 4s~20s
* Wipe/wash mode priority
* Wiper motor's park switch
* Relay driver with Z-diode
* One external capacitor determines all time sequences
* Interference protection according to VDE 0839 or ISO/TR 637/1
* Load-dump protected

■ ORDERING INFORMATION

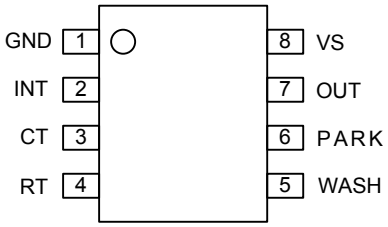
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UU642L-D08-T	UU642G-D08-T	DIP-8	Tube
UU642L-S08-R	UU642G-S08-R	SOP-8	Tape Reel

UU642L-D08-T (1)Packing Type (2)Package Type (3)Halogen Free	(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8 (3) L: Lead Free, G: Halogen Free

■ MARKING INFORMATION

PACKAGE	MARKING
SOP-8	
DIP-8	

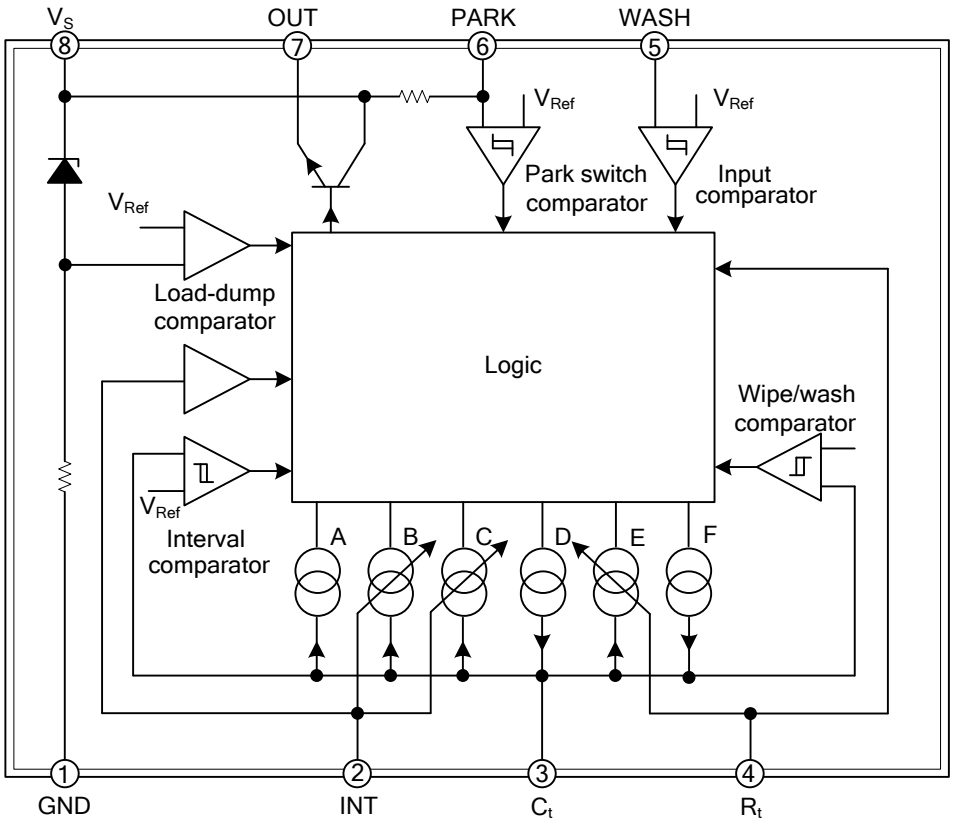
■ PIN CONFIGURATION



■ 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	t=2ms	I_8	1.5	A
	t=200ms		150	mA
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°C		P_D	500	mW
Ambient Temperature Range		T_A	-40~+85	°C
Storage Temperature Range		T_{STG}	-55~+125	°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

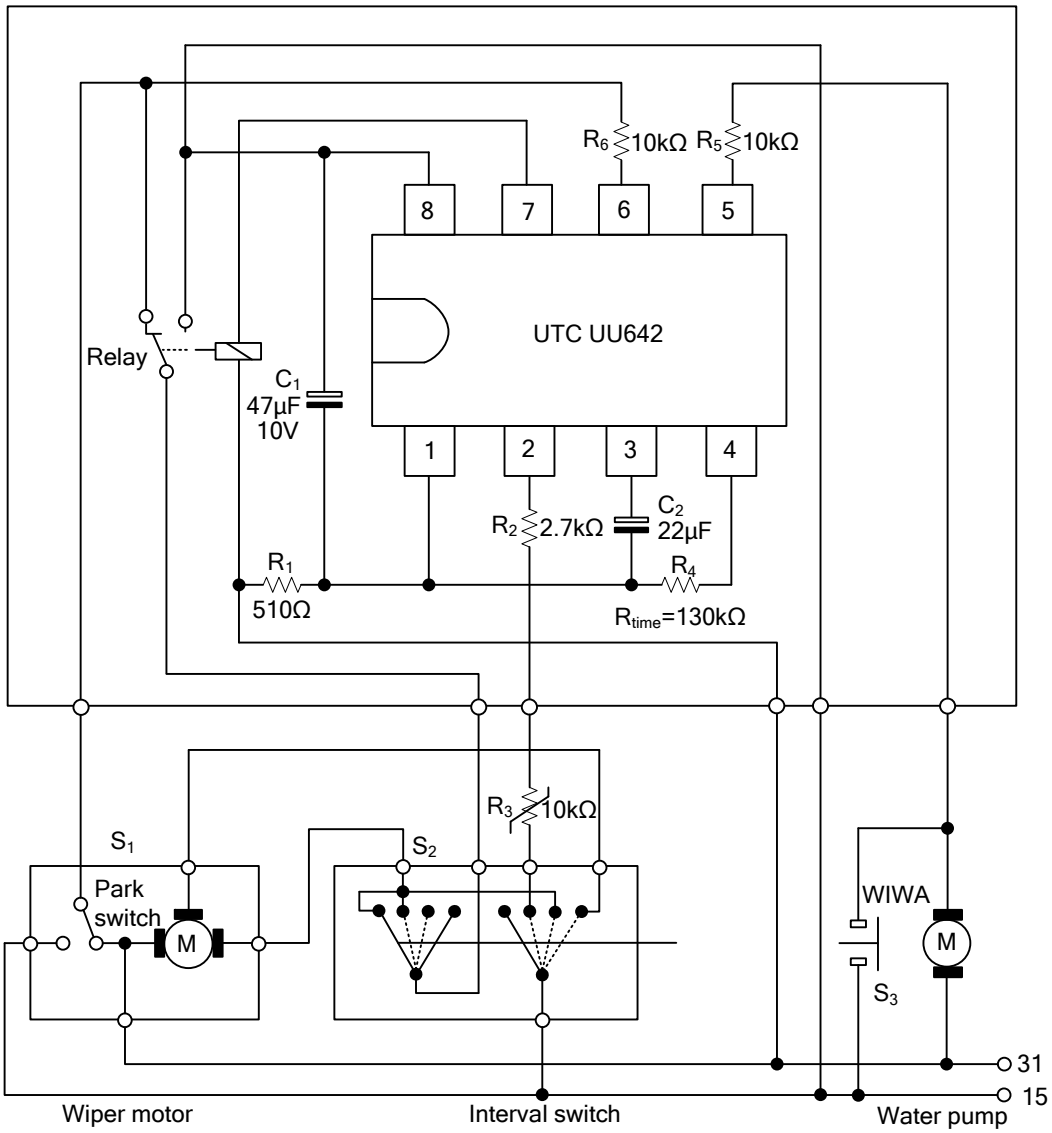
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	DIP-8	θ_{JA}	120	K/W
	SOP-8		160	K/W

■ ELECTRICAL CHARACTERISTICS

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

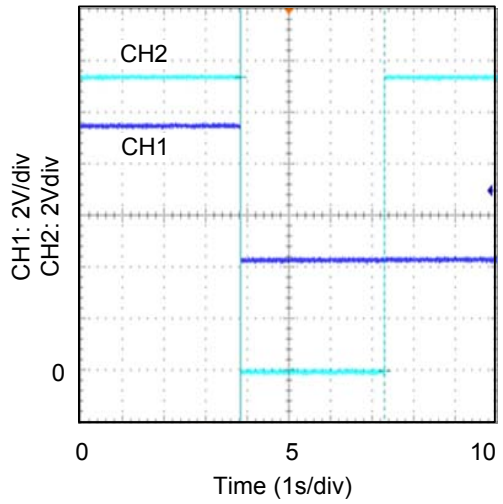
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{Batt}		9		16.5	V
Supply Current	I_8			9		mA
Z-Diode Limitation	V_1			7.6		V
Overvoltage						
Threshold Current	I_1			-50		mA
Threshold Voltage	V_{Batt}			37		V
Relay Control Output						
Saturation Voltage	V_7	I_7=100mA			-1.0	V
		I_7=200mA			-1.5	V
Leakage Current	I_7			100		μA
Park Switch						
Internal Pull-Up Resistance	R_6	R_6=10kΩ		41		kΩ
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=2.7~30kΩ						
Protection Diode	V_2	I_2=-10mA		-0.8		V
		I_2=30mA/10ms		7.6		V
WASH Input R_5=10kΩ						
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=47kΩ~300kΩ, I_4=-150μA						
Interval Time	t_2	R_3=0kΩ		3.45		s
		R_3=10kΩ		10.8		s
Prewash Delay	t_{del}			80		ms
After-Wipe-Time	t_5	R_4=130kΩ		4.7		s

■ TYPICAL APPLICATION CIRCUIT

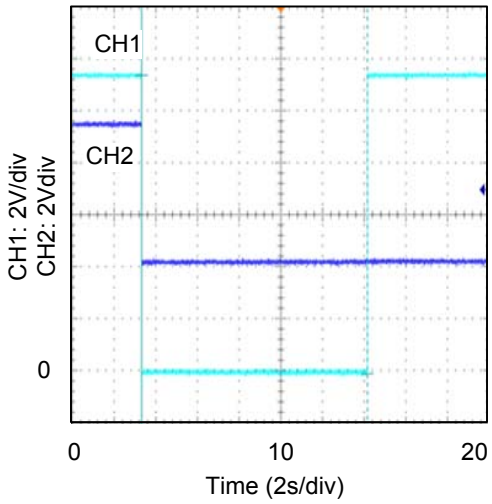


■ TYPICAL CHARACTERISTICS

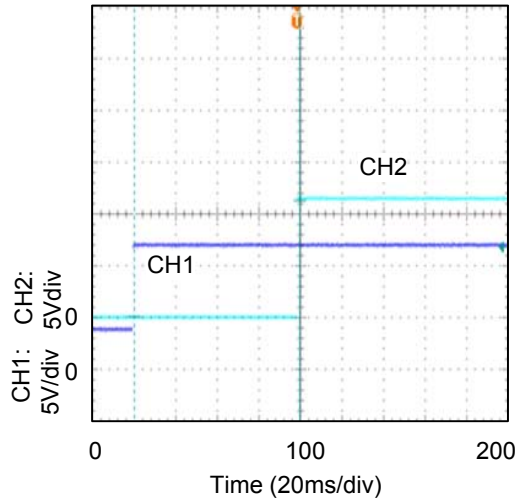
Interval Time (R3=0Ω)



Interval time (R3=10KΩ)



Prewash Delay



After Wipe Time