



Product Change Notification



Product Group: OPT/Fri Dec 17, 2021/PCN-OPT-1176-2021-REV-0

TCRT1000,TCRT1010,TCRT1010S - Change in Chip

DESCRIPTION OF CHANGE: A new chip generation will be introduced in TCRT1000,TCRT1010,TCRT1010S.

With the new chip, the devices will have more than 40% increased collector current. The high performance chip allows customers to achieve the required intensity with lower driving current.

REASON FOR CHANGE: Introduction of new chip generation with improved electro-optical performance.

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: No influence on quality and reliability expected. Nevertheless, we recommend to test the product in customers application.

PART NUMBERS/SERIES/FAMILIES AFFECTED: TCRT1000, TCRT1010, TCRT1010S,

VISHAY BRAND(s): Vishay Semiconductors

TIME SCHEDULE:

Start Shipment Date: Sun May 1, 2022

SAMPLE AVAILABILITY: 31.Jan.2022

PRODUCT IDENTIFICATION: Date code

QUALIFICATION DATA: Available upon request

This PCN is considered approved, without further notification, unless we receive specific customer concerns before Fri Apr 15, 2022 or as specified by contract.

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TCRT1000,TCRT1010,TCRT1010S - Char

Change overview

PCN: OPT-1176-2021 Rev. 0

Change Overview

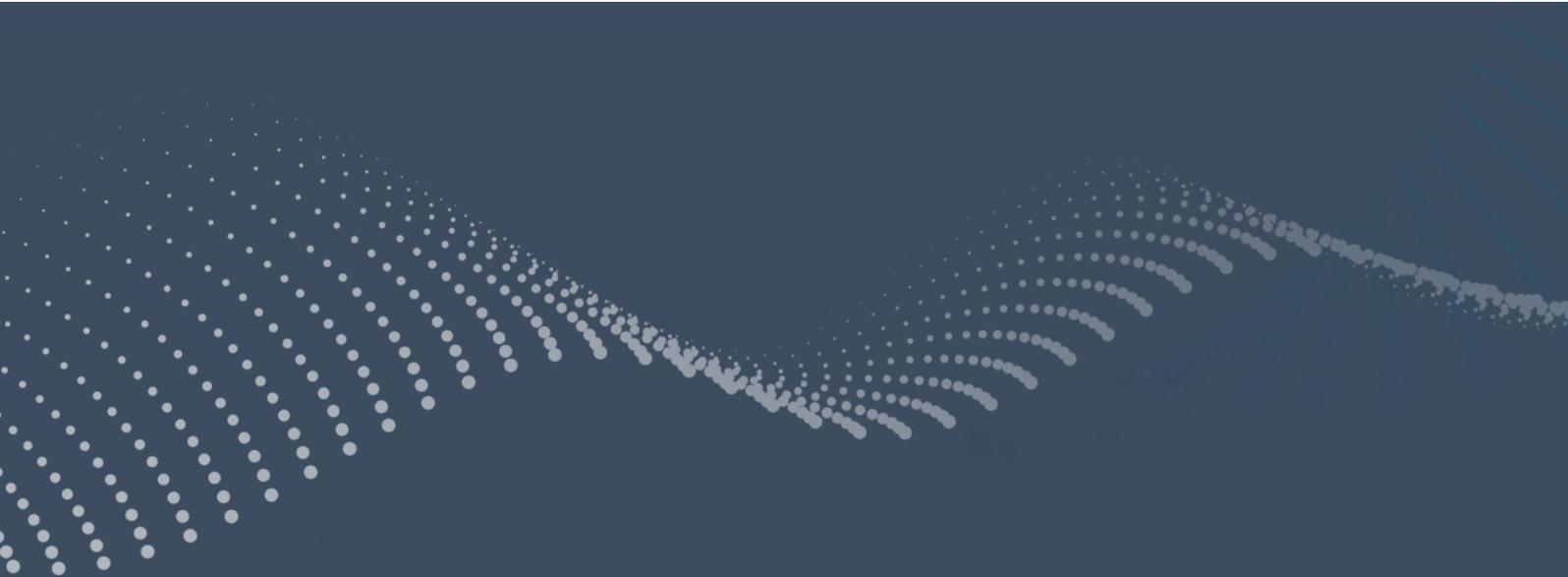
Before PCN

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
SENSOR						
Collector current	$V_{CE} = 5\text{ V}$, $I_F = 20\text{ mA}$, $d = 1\text{ mm}$ (figure 2)	$I_C^{(1)}$	0.3	0.5		mA
Cross talk current	$V_{CE} = 5\text{ V}$, $I_F = 20\text{ mA}$, (figure 1)	$I_{CX}^{(2)}$			1	μA
Collector emitter saturation voltage	$I_F = 20\text{ mA}$, $I_C = 0.1\text{ mA}$, $d = 1\text{ mm}$ (figure 2)	$V_{CEsat}^{(1)}$			0.3	V
INPUT (EMITTER)						
Forward voltage	$I_F = 50\text{ mA}$	V_F		1.25	1.6	V
Radiant intensity	$I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	I_e			7.5	mW/sr
Peak wavelength	$I_F = 100\text{ mA}$	λ_p	940			nm
Virtual source diameter	Method: 63 % encircled energy	d		1.2		mm
OUTPUT (DETECTOR)						
Collector emitter voltage	$I_C = 1\text{ mA}$	V_{CEO}	32			V
Emitter collector voltage	$I_E = 100\text{ }\mu\text{A}$	V_{ECO}	5			V
Collector dark current	$V_{CE} = 20\text{ V}$, $I_F = 0\text{ A}$, $E = 0\text{ lx}$	I_{CEO}			200	nA

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)	
PARAMETER	UNIT
SENSOR	
Collector current	$V_{CE} = 5\text{ V}$, $I_F = 20\text{ mA}$, $d = 1\text{ mm}$ (figure 2)
Cross talk current	$V_{CE} = 5\text{ V}$, $I_F = 20\text{ mA}$, (figure 1)
Collector emitter saturation voltage	$I_F = 20\text{ mA}$, $I_C = 0.1\text{ mA}$, $d = 1\text{ mm}$ (figure 2)
INPUT (EMITTER)	
Forward voltage	$I_F = 50\text{ mA}$
Peak wavelength	$I_F = 100\text{ mA}$
OUTPUT (DETECTOR)	
Collector emitter voltage	$I_C = 1\text{ mA}$
Emitter collector voltage	$I_E = 100\text{ }\mu\text{A}$
Collector dark current	$V_{CE} = 20\text{ V}$, $I_F = 0\text{ A}$, $E = 0\text{ lx}$

Main change:

- Higher Collector current (Typical : 0.5mA to 0.7mA)



Thank you