

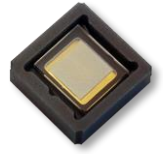
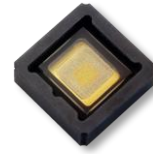


Stanley Electric's IR VCSELs

IR VCSEL series

Automotive quality AEC-Q102-compliant, highly reliable packages

High quality package engineering realizes high heat dissipation



UDN1Z54
(54x43 deg.)

UEN1ZA9
(110x85 deg.)

◆ Applications

Automotive	Industry
<p>DMS / OMS (Occupant Monitoring System)</p>	<p>LiDAR / ToF sensors</p>
<p>Gesture control</p>	

◆ Features

- High heat dissipation structure and highly reliable package engineering cultivated through the years by creating high-power LEDs for headlamps
- Automotive interior quality compliant with AEC – Q102
- Eye safety compliant engineering : IEC 60825 (JIS C6802)
- A lineup of two types of variations (output and light distribution) to match each application
- * Protection diode (PD) available for safety (diffuser dropout detection)

◆ Specifications



Product name			UDN1Z54	UDN1ZE54	UEN1ZA9	UEN1ZE9A9	Unit
Electrical/Optical characteristics ※1	Central emission wavelength	λ_c	940		940		nm
	Irradiation angle	FOV	54 (X direction) x 43 (Y direction)		110 (X direction) x 85 (Y direction)		deg.
	Light output (peak)	Po	2.1 (I _F =2.7A)		2.8 (I _F =4A)		W
	Threshold current	I _{th}	0.3		0.7		A
	Forward voltage	V _F	2.1 (I _F =2.7A)		2.1 (I _F =4A)		V
	Response speed	tr/tf	1 (10~90%)		1 (10~90%)		ns
	PD	Photocurrent	I _p	–	1.0	–	1.0
Dark current		I _d	–	10.0	–	10.0	nA
Bonding capacity※2		C _j	–	0.7	–	0.7	pF
Absolute maximum ratings	Forward current	I _F	2		2		A
	Pulsed forward current	I _{FRM}	6		10		A
	Operating temp.	T _{opr}	-40~+125	-40~+105	-40~+125	-40~+105	°C
	Storage temp.	T _{stg}	-40~+125		-40~+125		°C
Thermal resistance ※3	R _{th(j-s)}	10		10		°C/W	
External dimensions	L×W×H	3.5 × 3.5 × 1.225		3.5 × 3.5 × 1.225		mm	

Ts=50°C

※1 Pulsed current : 0.3msec pulse 1/100 duty

※2 V_r=3V,H=0,F=1MHz

※3 Thermal resistance: Junction - Soldering section