

Light Emitting Diodes

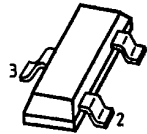
LR S250
... LU S250

SIEMENS AKTIENGESELLSCHAFT

T-41-19

LEDs - single and double diodes

- Backlighting of LCDs
- Proximity switches
- Touch keyboards
- Failure indications on SMD PC boards
- Electronic scales
- Moving sign



Type	Color	Ordering code for versions in bulk	Ordering code for versions on tape		Package
			18-cm-reel E-7502	33-cm-reel E-7503	
LR S250-DO	red	Q62703-Q1539	Q62703-Q1160	Q62703-Q1161	SOT 23 (colorless, diffuse)
LS S250-DO	super-red	Q62703-Q1516	Q62703-Q1640	Q62703-Q1675	
LY S250-DO	yellow	Q62703-Q1517	Q62703-Q1657	Q62703-Q1677	
LG S250-DO	green	Q62703-Q1518	Q62703-Q1608	Q62703-Q1674	
LU S250-DO	super-red/ green	Q62703-Q1519	Q62703-Q1642	Q62703-Q1676	

Maximum ratings

Parameter	Symbol	LU S250-DO	LR S250-DO, LS S250-DO, LG S250-DO, LY S250-DO	Unit
Reverse voltage	V_R	5	5	V
Forward current	I_F	30	30	mA
Surge forward current $\tau = 10 \mu s/D = 0$	I_{FS}	0,5	0,5	A
Total power dissipation	P_{tot}	200 ¹⁾	100	mW
Junction temperature	T_j	100	100	°C
Storage temperature	T_{stg}	-55 ... +100	-55 ... +100	°C
Circuit		Pins: 1 + 3 super-red 2 + 3 green		
Thermal resistance junction - ambient package mounted on alumina 15 mm x 16.7 mm x 0.7 mm	R_{thJA}	375 ¹⁾	750	K/W

■ Preferred types

¹⁾ In parallel circuits of both systems.

Electrical characteristics

at $T_A = 25^\circ\text{C}$, unless otherwise specified

	Symbol	min	typ	max	Unit
Wavelength at peak emission	λ_{peak}				
LR S250		645	660	675	nm
LS S250		620	635	650	nm
LY S250		580	590	600	nm
LG S250		545	565	575	nm
Dominant wavelength	λ_{dom}				
LR S250		—	645	—	nm
LS S250		—	628	—	nm
LY S250		—	592	—	nm
LG S250		—	564	—	nm
Viewing angle	2φ	—	140	—	deg
Limits for 50% of luminous intensity I_v		—	100	—	deg
LR S250					
Forward voltage	V_F	—	2,0	2,6	V
$I_F = 10\text{ mA}$	LR S250	—	1,6	2,0	V
Reverse current	I_R	—	0,01	10	μA
$V_R = 5\text{ V}$					
Luminous intensity	I_v	0,4	1,0	—	mcd
$I_F = 10\text{ mA}$					
Diode capacitance	C_D				
$V_R = 0\text{ V}, f = \text{MHz}$					
LR S250		—	40	—	pF
LS S250		—	12	—	pF
LY S250		—	10	—	pF
LG S250		—	45	—	pF

Relative spectral emission

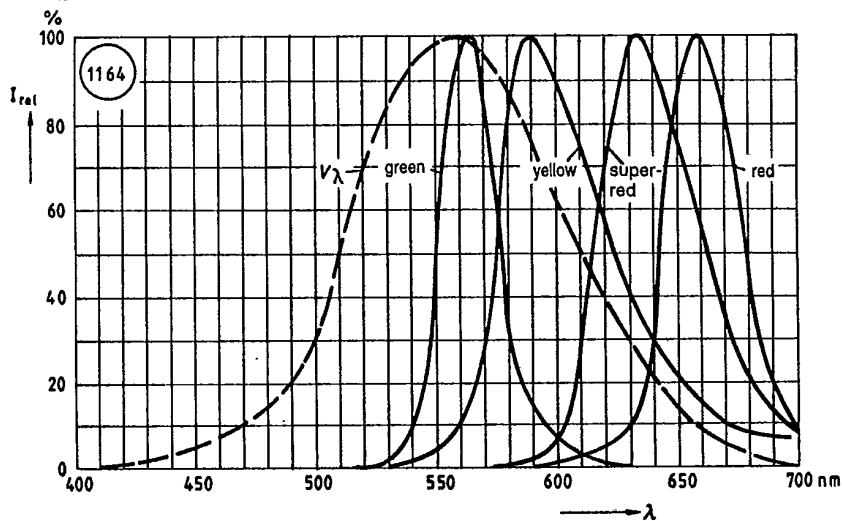
$$I_{\text{rel}} = f(\lambda)$$

(V_λ = Standard eye response curve)

Relative spectral emission

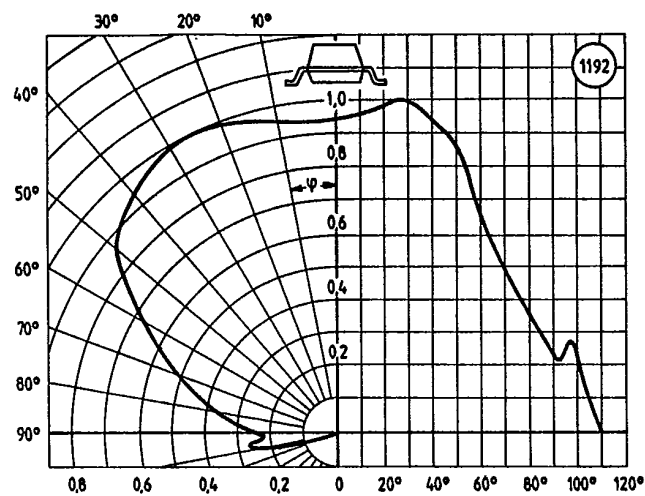
$$I_{rel} = f(\lambda)$$

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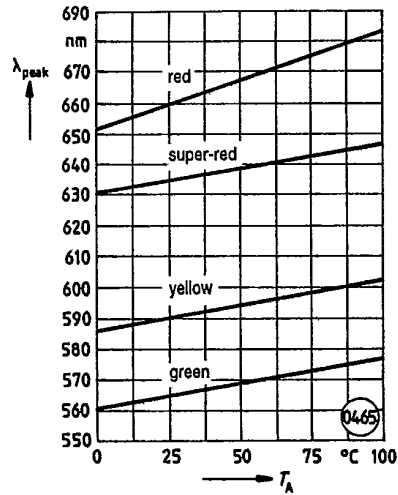


Radiation characteristic

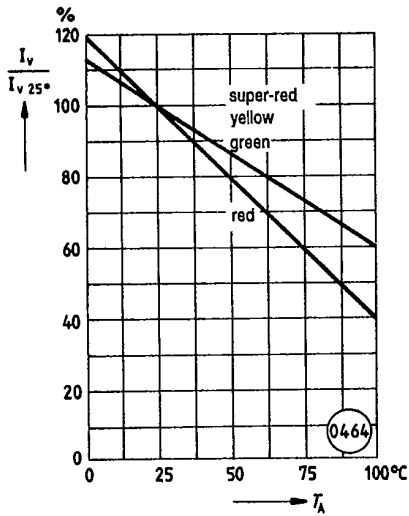
$$I_{rel} = f(\varphi)$$



Wavelength at peak emission
 $\lambda_{\text{peak}} = f(T_A)$



Rel. luminous intensity $\frac{I_v}{I_{v25}} = f(T_A)$



Rel. luminous intensity $\frac{I_v}{I_{v10\text{mA}}} = f(I_F)$

