

Light Emitting Diodes

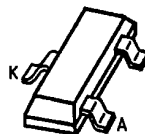
SIEMENS AKTIENGESELLSCHAFT *T-41-19*

LG S259

... LS S259

LED low-current single diodes

- Backlighting of LCDs
- Indicator for switching and operation modes
- Direct drive is possible via CMOS gate and LSTTL components
- Omission of LED driver stages
- Extended service life of batteries in mobile equipment
- Reduced power dissipation in both the driving circuitry and the LED



Type	Color	Ordering code for versions in bulk	Ordering code for versions on		Package
			8 mm-tape 18-cm-reel E-7502	33-cm-reel E-7503	
LS S259-BO	super-red	Q62703-Q1598	Q62703-Q1566	Q62703-Q1567	SOT 23 (colorless diffuse)
LY S259-BO	yellow	Q62703-Q1579	Q62703-Q1568	Q62703-Q1569	
LG S259-BO	green	Q62703-Q1599	Q62703-Q1570	Q62703-Q1571	

Maximum ratings

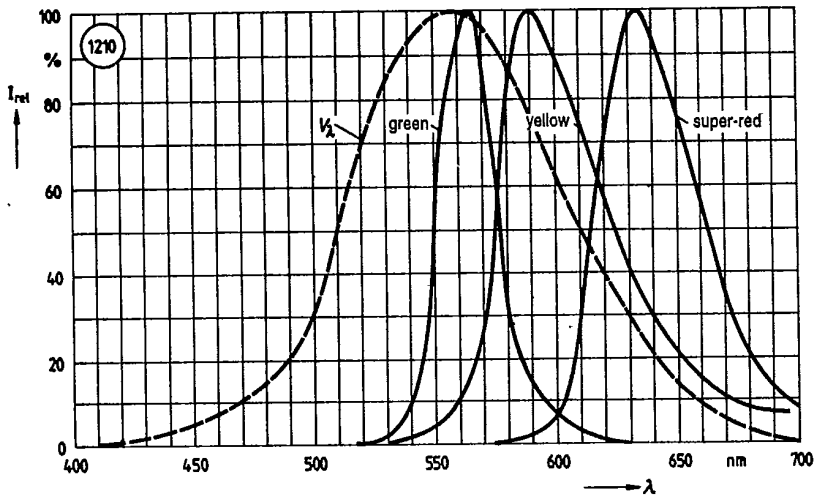
Parameter	Symbol	Ratings	Unit
Reverse voltage	V_R	5	V
Forward current	I_F	7,5	mA
Surge forward current	I_{FS}	25	mA
$\tau \leq 1$ ms, $D \leq 0.05$		100	mA
$\tau \leq 10$ μ s, $D \leq 0.005$		20	mW
Total power dissipation	P_{tot}	100	°C
Junction temperature	T_j	—55 ... +100	°C
Storage temperature	T_{stg}		
Thermal resistance junction-ambient package mounted on alumina 15 mm x 16.7 mm x 0.7 mm	R_{thJA}	750	K/W

Electrical characteristics

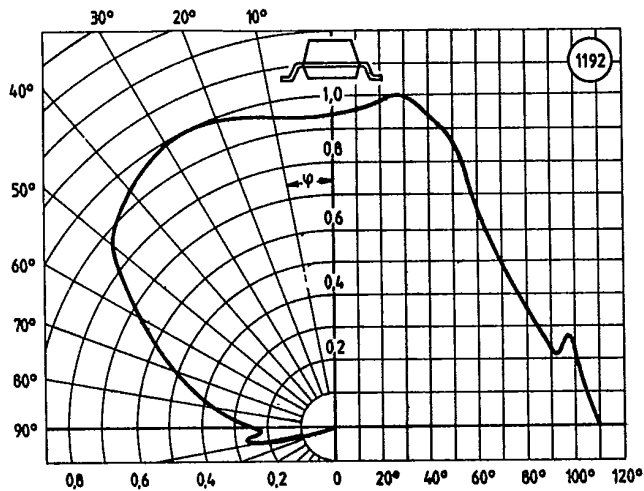
at $T_A = 25^\circ\text{C}$, unless otherwise specified

	Symbol	min	typ	max	Unit
Wavelength at peak emission $I_F = 2\text{ mA}$	λ_{peak}				
LS S259		—	635	—	nm
LY S259		—	590	—	nm
LG S259		—	565	—	nm
Dominant wavelength $I_F = 2\text{ mA}$	λ_{dom}				
LS S259		—	625	—	nm
LY S259		—	592	—	nm
LG S259		—	564	—	nm
Viewing angle, limits for 50% of luminous intensity I_V	2φ	—	140	—	deg
Forward voltage $I_F = 2\text{ mA}$	V_F				
LS S259		—	1,8	2,5	V
LY S259		—	1,9	2,7	V
LG S259		—	1,9	2,5	V
Reverse voltage $I_R = 100\text{ }\mu\text{A}$	V_R	5	—	—	V
Reverse current $V_R = 5\text{ V}$	I_R	—	0,01	10	μA
Luminous intensity $I_F = 2\text{ mA}$	I_V	—	0,16	—	mod
Diode capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_D				
LS S259		—	3	—	pF
LY S259		—	3	—	pF
LG S259		—	12	—	pF
Switching time $I_F = 25\text{ mA}$, $t = 1\text{ }\mu\text{s}$ I_V from 10% ... 90%	t_r				
LS S259		—	200	—	ns
LY S259		—	200	—	ns
LG S259		—	450	—	ns
Switching time $I_F = 25\text{ mA}$, $t = 1\text{ }\mu\text{s}$ I_V from 90% ... 10%	t_f				
LS S259		—	150	—	ns
LY S259		—	150	—	ns
LG S259		—	200	—	ns

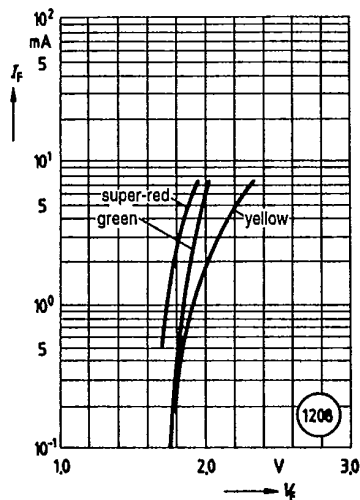
Relative spectral emission
 versus wavelength
 (V_λ = Standard eye response curve)



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

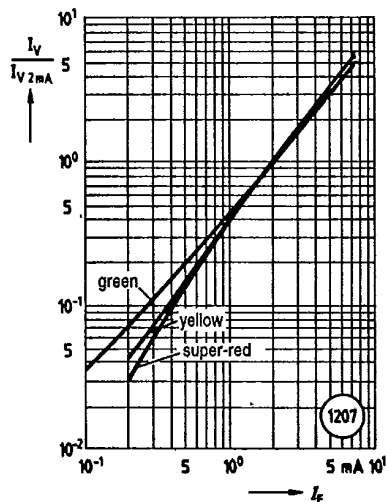


Forward current
 $I_F = f(V_F)$

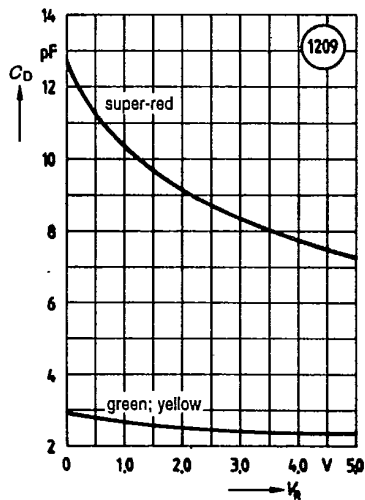


Rel. luminous intensity

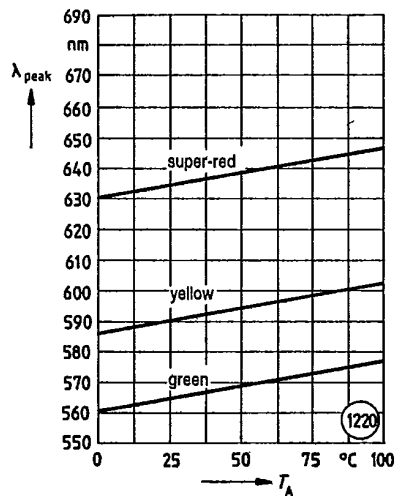
$$I_{Vrel} = \frac{I_V}{I_{V 2 mA}} = f(I_F)$$



Diode capacitance
 $C_D = f(V_R)$



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



Forward current
 $I_F = f(T_A)$

