

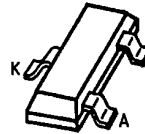
Light Emitting Diodes

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 8 mm-tape		Package
			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	

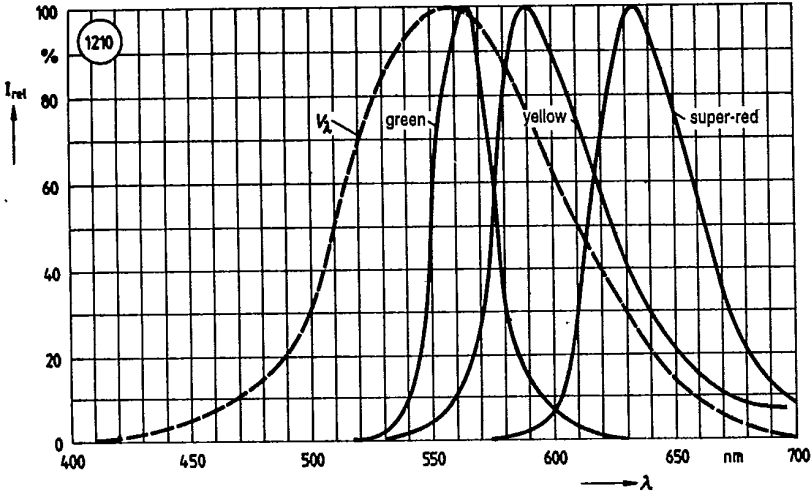
Maximum ratings

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
$\tau \leq 10$ $\mu$ s, $D \leq 0.005$		20	mW
Total power dissipation	$P_{tot}$	100	$^{\circ}$ C
Junction temperature	$T_j$	-55 ... +100	$^{\circ}$ 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

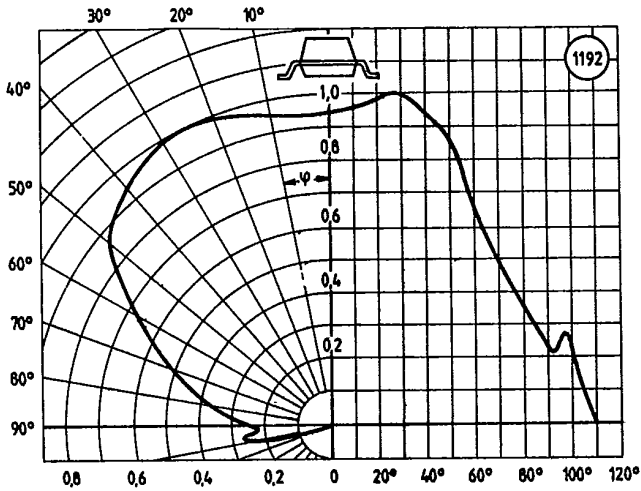
**Electrical characteristics**at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

	Symbol	min	typ	max	Unit
Wavelength at peak emission $I_F = 2\text{ mA}$	$\lambda_{\text{peak}}$				
LS S259		-	635	-	nm
LY S259		-	590	-	nm
LG S259		-	565	-	nm
Dominant wavelength $I_F = 2\text{ mA}$	$\lambda_{\text{dom}}$				
LS S259		-	625	-	nm
LY S259		-	592	-	nm
LG S259		-	564	-	nm
Viewing angle, limits for 50% of luminous intensity $I_V$	$2\varphi$	-	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 $I_R = 100\ \mu\text{A}$	$V_R$	5	-	-	V
Reverse current $V_R = 5\text{ V}$	$I_R$	-	0,01	10	$\mu\text{A}$
Luminous intensity $I_F = 2\text{ mA}$	$I_V$	-	0,16	-	md
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 $I_F = 25\text{ mA}$ , $t = 1\ \mu\text{s}$ $I_V$ from 10% ... 90%	$t_r$				
LS S259		-	200	-	ns
LY S259		-	200	-	ns
LG S259		-	450	-	ns
Switching time $I_F = 25\text{ mA}$ , $t = 1\ \mu\text{s}$ $I_V$ from 90% ... 10%	$t_f$				
LS S259		-	150	-	ns
LY S259		-	150	-	ns
LG S259		-	200	-	ns

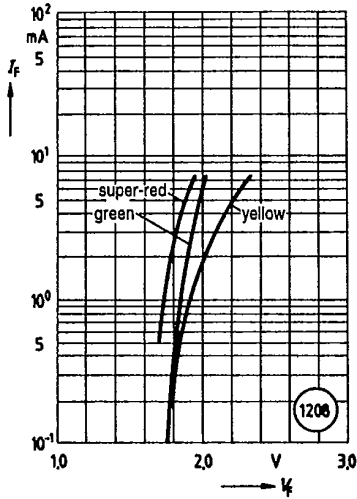
Relative spectral emission  
 versus wavelength  
 ( $V_\lambda$  = Standard eye response curve)



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

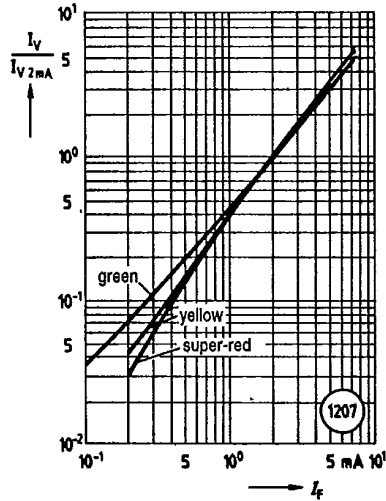


Forward current  
 $I_F = f(V_F)$

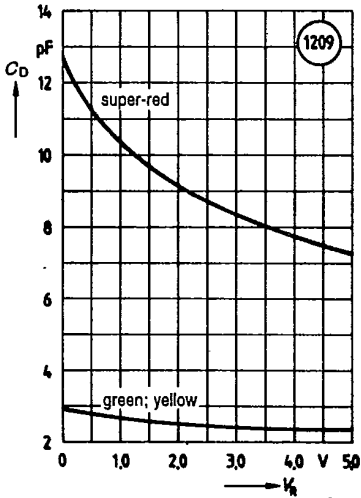


Rel. luminous intensity

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

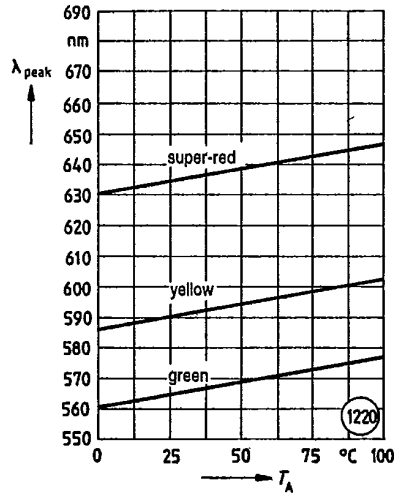


Diode capacitance  
 $C_D = f(V_R)$



Wavelength at peak emission

$$\lambda_{peak} = f(T_A)$$



Forward current  
 $I_F = f(T_A)$

