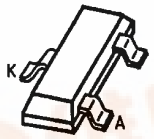
Light Emitting Diodes

SIEMENS AKTIENGESELLSCHAF 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 18-cm-reel E-7502	33-cm-reel E-7503	Package
LS S259-BO	super-red	Q62703-Q1598	Q62703-Q1566	Q62703-Q1567	SOT 23
LY S259-BO	yellow	Q62703-Q1579	Q62703-Q1568	Q62703-Q1569	(colorless
LG S259-BO	green	Q62703-Q1599	Q62703-Q1570	Q62703-Q1571	diffuse)

Maximum ratings

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

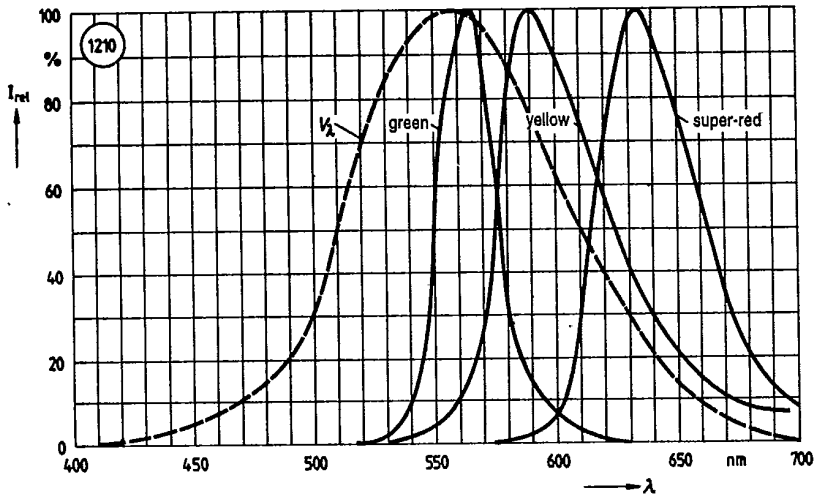
Electrical characteristics

at $T_A = 25\,°C$, unless otherwise specified

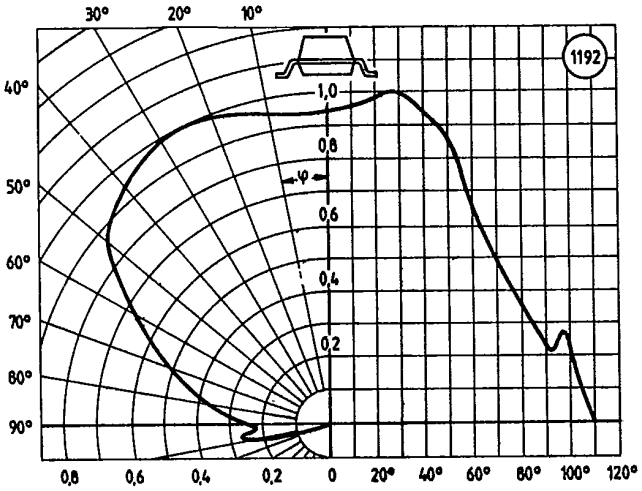
		Symbol	min	typ	max	Unit
Wavelength at peak emission $I_F = 2$ mA		λ_{peak}				
	LS S259		–	635	–	nm
	LY S259		–	590	–	nm
	LG S259		–	565	–	nm
Dominant wavelength $I_F = 2$ mA		λ_{dom}				
	LS S259		–	625	–	nm
	LY S259		–	592	–	nm
	LG S259		–	564	–	nm
Viewing angle, limits for 50% of luminous intensity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

LG S259
... LS S259

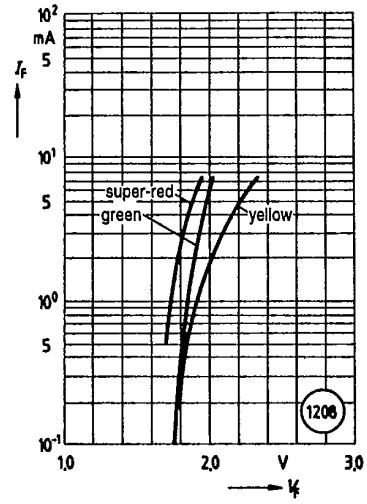
Relative spectral emission
versus wavelength
(V_λ = Standard eye response curve)



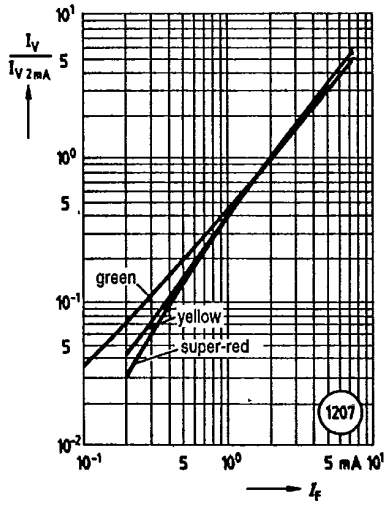
Radiation characteristic
$I_{rel} = f(\varphi)$



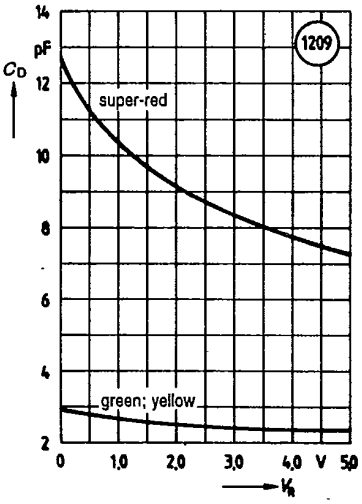
Forward current
$I_F = f(V_F)$



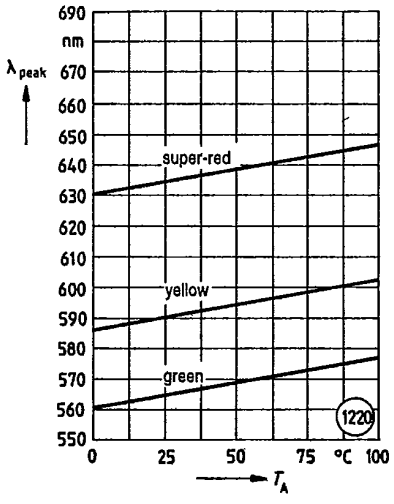
Rel. luminous intensity
$I_{Vrel} = \frac{I_V}{I_{V\,2mA}} = f(I_F)$



Diode capacitance
$C_D = f(V_R)$



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



Forward current
$I_F = f(T_A)$