

substance: CrSi₂

property: electronic properties

energy gap

$E_{g,th}$	0.27 eV	from $\rho(T)$ above 600 K	63S
	0.35 eV	from $\rho(T)$ and $R_H(T)$	64S
	0.32 eV	from $\rho(T)$, $R_H(T)$, $S(T)$	72N
		along [100] and [001]	
	0.30 eV	from $\rho(T)$, $S(T)$	73N
	0.29...0.32 eV	from $\log \rho$ vs. T^{-1}	78N
	0.30 eV	from $\log (T^{3/2}R_H)$ vs. T^{-1}	78N

band overlap ≈ 0.1 eV at 100 K; overlap disappears at ≈ 400 K [70K].

effective masses

(||: along c ; \perp : within the (a_1, a_2) -plane)

m_n	$\approx 7 m_0$	density of states mass	64S
	$12 m_0$		73N
	$20.2 m_0$		78N
m_p	$\approx 5 m_0$	density of states mass	64S
	$3.2 m_0$		73N,
			78N
$m_{p }$	$5 m_0$		72N
$m_{p\perp}$	$3 m_0$		72N

m_p independent of x in $Cr_{1-x}Mn_xSi_2$, whereas m_n decreases to $7.5 m_0$ for $x = 0.182$ [78N].

References:

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