



## Si1012CR vs. Si1012R

**Description:** N-Channel, 20 V (D-S) MOSFET

**Package:** SC-75A

**Pin Out:** Identical

**Part Number Replacements:** Si1012CR-T1-GE3 replaces Si1012R-T1-GE3

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise noted)					
PARAMETER	SYMBOL	Si1012CR	Si1012R	UNIT	
Drain-Source Voltage	$V_{DS}$	20	20	V	
Gate-Source Voltage	$V_{GS}$	$\pm 8$	$\pm 6$		
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	0.63	0.6	A
	$T_A = 70\text{ }^\circ\text{C}$		0.5		
Pulsed Drain Current	$I_{DM}$	2	1		
Continuous Source Current (MOSFET Diode Conduction)	$I_S$	0.2	0.275		
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	0.24	0.175	W
	$T_A = 70\text{ }^\circ\text{C}$		0.15	0.090 <sup>a</sup>	
Operating Junction and Storage Temperature Range	$T_J$ and $T_{stg}$	- 55 to 150	- 55 to 150	$^\circ\text{C}$	
Maximum Junction-to-Ambient	$R_{thJA}$	530	NS	$^\circ\text{C/W}$	

<b>SPECIFICATIONS</b> ( $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise noted)									
PARAMETER	SYMBOL	Si1012CR			Si1012R			UNIT	
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
<b>Static</b>									
Gate-Threshold Voltage	$V_{GS(th)}$	0.4		1	0.45		0.9	V	
Gate-Body Leakage	$I_{GSS}$			$\pm 1$		$\pm 0.5$	$\pm 1$	$\mu\text{A}$	
Zero Gate Voltage Drain Current	$I_{DSS}$			1		0.0003	0.1		
On-State Drain Current	$V_{GS} = 4.5\text{ V}$	$I_{D(on)}$	2		0.7			A	
Drain-Source On-Resistance	$V_{GS} = 4.5\text{ V}$	$R_{DS(on)}$		0.330	0.396		0.41	0.70	$\Omega$
	$V_{GS} = 2.5\text{ V}$			0.380	0.456		0.53	0.85	
	$V_{GS} = 1.8\text{ V}$			0.420	0.546		0.70	1.25	
Forward Transconductance	$g_{fs}$		7.5			1		S	
Diode Forward Voltage	$V_{SD}$		0.8	1.2		0.8	1.2	V	

**Notes**

a.  $T_A = 85\text{ }^\circ\text{C}$  instead of  $70\text{ }^\circ\text{C}$ .

NS denotes not specified in original specification.

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.