DOCUMENT CHANGE REQUEST

DCR number 526	Changes required for: General	Originator: Steve Thacker - ESCC
Date: 2009/06/09	Date sent: 2009/06/09	Organisation: ESA/ESTEC
Status: IMPLEMENTED		

Title:	Diodes Switching, based on types 1N5807 through 1N5811		
Number:	5101/013	Issue:	1

Other documents affected:

Page:

see below

Paragraph:

see below

Original wording:

Proposed wording:

This DCR proposes additional changes to those already proposed in DCR449.

The following changes are proposed to ESCC5101/013 on behalf of Microsemi/I as impacts the original Variants 01 to 10 (previously attributed to Microsemi/I) and addition of 3 new variants for Microsemi/I:

See attachment 5101/013 issue 2 Draft D for details (which also implements approved DCR447 & open DCR449).

1 - Spec title, Table 1(a), Table 1(b), Figure 1, Figure 2, Para 4.4 Materials & Finishes, Table 2, Table 3, Table 5
Delete all references to Variants 03, 04 (1N5808), 07, 08 (1N5810) (which are not supported by Microsemi/I)
Add new MELF (MELF-E) packaged variants 1N5807US, 1N5809US & 1N5811US (Variants 13, 14, 15)(equivalent to package â..USâ.. options per MIL-PRF-19500/477)

2 - Table 1(a),
Add Forward Surge Current rating, IFSM, to table.

3 - Table 1(b) Forward Surge Current Rating
Amend table to refer to the value specified in the Component Type Variants table.

4 - Table 1(b) & Figure 1, Average Output Rectified Current Rating
Delete Figure 1 and for Microsemi/I variants 01, 02, 05, 06, 09, 10, amend derating to be for a single value lead position

(9.5mm from body) and derating to be linear above +75C to 0A at Tlead = +175C (to be consistent with MIL-PRF-19500/477).
For new Microsemi/I variants 13, 14, 15, derating is specified with Tlead at 0mm from body (at end cap).

5 - Table 1(b) Thermal Resistance
Add Thermal resistance rating (to be consistent with MIL-PRF-19500/477):
Rth(j-l) = 22C/W for Variants 01, 02, 05, 06, 09, 10 at Tlead 9.5mm from body
Rth(j-l) = 6.5C/W for Variants 13, 14, 15 at Tlead 0mm from body

6 - Para 4.3.2 Weight
Amend weight to be 0.9g max for axial lead variants & 0.65g max for MELF variants (based on Microsemi/I nominal data sheet value +20%)

7 - Table 2
For Variants 01, 02, 05, 06, 09, 10, 13, 14, 15, amend & add several characteristics limits & test conditions to be consistent with MIL-PRF-19500/477 as follows:
Add VF1 & VF3 (at IF=3A & IF=6A)(VF3 limit = 0.925V max)
Add Breakdown Voltage test (V(BR))
Capacitance (amend limit to be 60pF)
Reverse Recovery time (amend test conditions)
Add Forward Recovery Time
Add Forward Recovery Voltage
Thermal Impedance, Junction to Reference Point, Zth(j-x), (conditions as applied by Microsemi/I to meet the requirements of MIL-PRF-19500/477)

8 - Table 3 (High & Low Temp Electrical Measurements)
For Variants 01, 02, 05, 06, 09, 10, 13, 14, 15, amend & add several characteristics test conditions to be consistent with MIL-PRF-19500/477 as follows:
IR1 (performed at 125C instead of 100C; limit = 525uA max)
Add VF2
Add V(BR)

9 - Table 5 Power Burn-in & Operating Life Conditions
Conditions amended to be:
Burn-in:
Tamb = +55C max
Tj = +135C min
VR = VRWM

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IO = 3A min
IO adjusted to give Tj

Operating Life:
Tamb = +55C max
Tj = +175C min
VR = Vrwm
IO = 3A min
IO adjusted to give Tj

Justification:

Microsemi/I has confirmed they still support ESCC procurement of variants 01, 02, 05, 06, 09, 10 plus would like to offer 'US' variants against ESCC.
The Microsemi/I ESCC specification for the available types is closely based on those available per MIL-PRF-19500/477. Accordingly the ESCC spec is amended to bring it in line with the MIL spec and the Microsemi/I implementation of the MIL requirements.

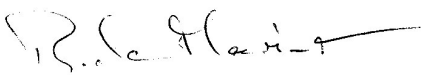
Attachments:

N/A

Modifications:

10 - Para 4.2.3(a). Delete statement that HTRB is not applicable and add HTRB Burn-in table (new para 2.7) applicable to all variants with conditions:
: Tamb = +150(+0 -5)C
: VR = 0.8 x VRWM
: Duration = 48h minimum

Approval signature:



Date signed:

2009-06-09